

volume 44

# Sci-fi & fantasy modeller

## *STAR TREK*

### ENTERPRISE

### the restoration



## fantastic voyage

## Proteus



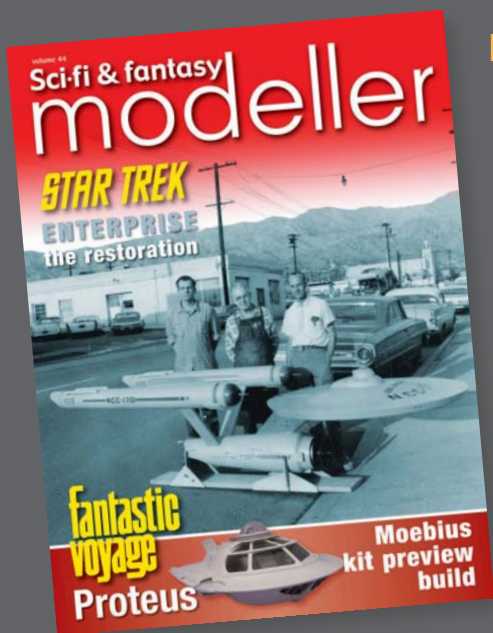
## Moebius kit preview build

Print editions can be obtained from:  
**[www.scififantasymodeller.co.uk](http://www.scififantasymodeller.co.uk)**  
[info@scififantasymodeller.co.uk](mailto:info@scififantasymodeller.co.uk)

# Sci-fi & fantasy modeller

Volume 44





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# Sci-fi & fantasy modeller

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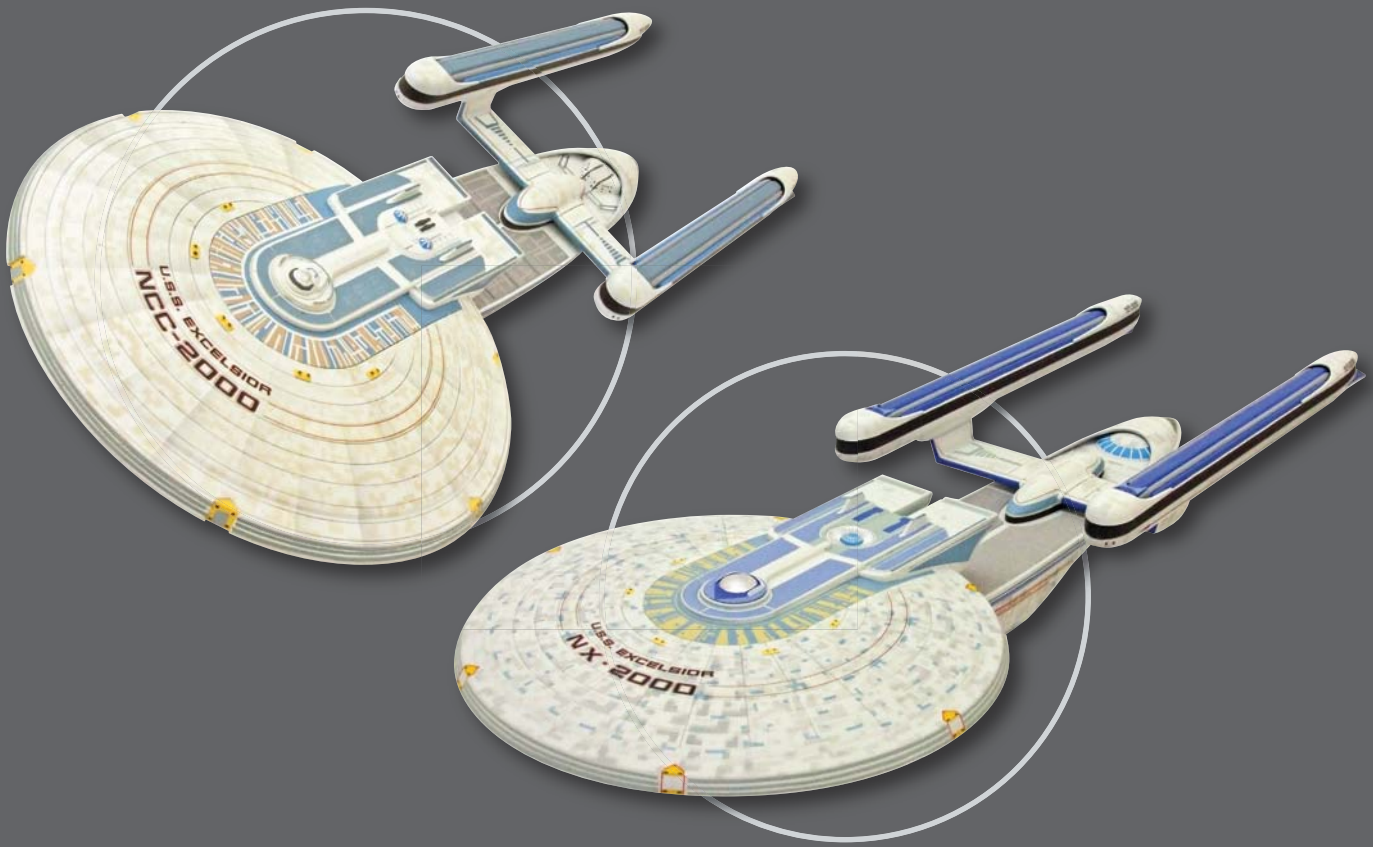
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## VOLUME 44 EDITORIAL

**Here's to a classy lady — fifty-three years old and still as gorgeous as ever**

We're the first generation (assuming most readers of this publication are 'of an age' by dint of the fact that they're still hard at it modelling rather than glued, zombie-eyed, to some device) to have witnessed rock stars age and still deliver the goods, their original recordings having to date given decades of pleasure.

Similarly, we're the first generation to have seen iconic SF designs be birthed and accompany us as we've travelled through our lives, watching them evolve into universal icons. The classic example is, of course, the *USS Enterprise*. Back in 1964 when the original *Star Trek* pilot was being produced, no-one knew what a starship should look like, and the chosen final design was daring, revolutionary and highly unusual. Today, if you ask anyone in any part of the world to describe a starship, even those with only minimum knowledge of the subject would likely give you a rough verbal approximation of 'a saucer, a secondary hull and two warp drive nacelles'. *Amazing!*

It is therefore with a certain amount of pride we present the full story of the creation and restoration of possibly the

most iconic SF design of them all – the eleven foot *Enterprise 1701* miniature that laid down the ground rules for the look of every *Starfleet* starship to follow (and, in the case of the *NX-01*, to 'predate' it), courtesy of long time contributor Gary Kerr, who recently worked as part of the *Smithsonian* team to restore the fabulous fifty-three year old lady to gleaming perfection).

...And we aim to re-acquaint you with other design classics this issue too – including the *Proteus* submarine, newly recreated as a kit by *Moebius*, and a next generation release of the *USS Excelsior*, itself a child of 'saucer, secondary hull and nacelles' thinking.

Will such designs still be a part of the popular culture fifty years from now? Classics don't age, and so I very much think they will... but enough of this. You're no doubt eager to immerse yourself in an issue packed with timeless subjects that, unlike you and I, never seem to age. So don't let my ramblings keep you further – it's time to bypass your verbose Ed and dive straight in.

Thank you as always for joining us and for reading. Meet you right here in ninety.

*Michael G. Reccia (Editor-In-Chief)*



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# HOT FROM THE MOULD

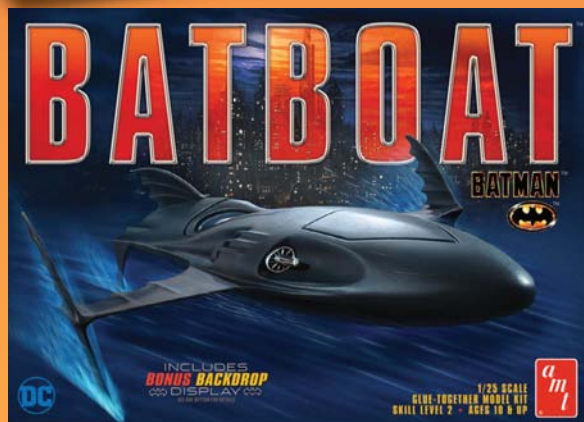
ROUNDING UP WHAT'S NEW AND HAPPENING IN SF AND FANTASY MODELLING

## ROUND 2

Jamie at Round 2 reports:

### 22" Eagle Special Edition

A kit just for the *Eagle* purists! This includes the 22" *Eagle* kit everyone has fallen in love with and adds even more to love, notably a full colour, 18" x 24" poster of the box illustration, a decal sheet featuring panelling and additional details not included in the usual sheet and, best of all, an authentic Brian Johnson hand-signed signature card! Planned for January 2017 release.



### Batboat

This is a relatively unadulterated re-issue of the *Batboat* featured in *Batman Returns*. Available January.

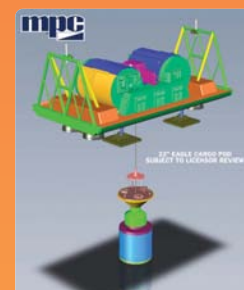
We've got a re-issue of the 1/537 *U.S.S. Reliant* coming in May along with the *Lindberg 5 Space Ship Set*. We are also working on some spooky pirate figures in the *Jolly Roger Lindberg* line. More on that next time!

### U.S.S. Enterprise box set

Having missed the 50th anniversary, the set will be out in March. All seven TV and early movie *Enterprise* kits come in 1:2500 scale and snap together. They include pressure sensitive decals similar to those that come in *Gundam* kits. They aren't quite as thin as those, but they are flexible enough to wrap around shapes and can be pressed into seam lines, etc. We are showing an early look at the all-new *NX-01* model that will come in the set.

### 22" Cargo Pod Eagle

Much has been said about our 22" *Eagle Transporter* kit, with modelling fans buzzing about what might come next. Here it is! It will feature the cargo platform pod, winch mechanism, magnetic hoist (magnet included) and four nuclear waste canisters. Unfortunately, all we can show right now is the 3D CAD work, but mockup parts have just arrived for a close-up review. Look for the kit around the middle of 2017.





## SIXTEEN 12 COLLECTIBLES

### 44-inch Eagle project diary

Here's the latest progress report from Steve Walker of *Sixteen 12*:



'We've been cracking on with development of the prototype *Eagles*, focussing specifically on the Passenger Pod and the Laboratory Pod.

'We've had great fun sourcing all the original kit parts where we can and many hours have

been spent with a microscope scrutinising images of original models and reference material.

'The fascinating thing, as any *Eagle* enthusiast will tell you, is the variation of kit part placement from model to model, due mainly to ongoing repair during production. One of the most interesting variations to date was the placement of the two black *Gemini* kit parts above/to either side of the door on the Passenger Pod, which varied greatly in the reference. As a rule, we decide to always defer to the earliest images of the 44-inch *Eagle* in production of Season 1, this being the studio miniature closest to being fresh from the model shop and as originally designed and constructed.

'For this reason we also decided to go with the 5 x 5 'toes' on the feet of the Season 1 *Eagles* rather than the 5 x 6 variation seen in Season 2.

'The original models used many architectural components from *EMA Plastics*, particularly on the inner cage details. Thankfully, not only are *EMA* still in business, but most of the parts are still readily available as stock, making our life that much easier!

'Hot News: We have decided to add another *Eagle* variant to the collection – that of the *Cargo Eagle*. This will feature a Cargo Pallet with six Nuclear Waste Canisters as well as accessories. (Great care was taken to reproduce the 'slightly out of alignment' text of the original studio canisters.)

'Both the *Cargo Eagle* and *Eagle Freighter* will be limited to an edition size of 50 only Worldwide.'

For further information visit: [www.sixteen12.com](http://www.sixteen12.com)

## MOEBIUS



### Batwing

*Moebius'* 17 inch long x 17 inch wide **Batman v Superman Batwing** kit is likely to be released second quarter of 2017 with a suggested retail price of \$99.99. The kit features optional armament and landing gear, an option to build with retracted wings and engines which can be displayed in VTOL position. A detailed build article of a test shot of the upcoming release featured last issue.

[www.Moebiusmodels.com](http://www.Moebiusmodels.com)

## Steve Howarth's Talon



40 build tutorials in HD video available  
at £2 each or £40 for complete set.  
Full details plus FREE trailer at:

[vimeo.com/ondemand/thetalonbuild/](http://vimeo.com/ondemand/thetalonbuild/)



## AMMO MIG JIMINEZ



### Oilbrusher

A true weathering revolution in the world of scale modelling – for the first time there is a ready-to-use range of oil paints available in the market. In contrast to traditional Artist Oils, which have a distinctive thick texture and so must be diluted for modelling use, *Oilbrusher* is a ready-to-use oil paint already diluted to the proper ratio and features a built-in applicator brush. Twenty-one colours are available.

[www.migjimenez.com](http://www.migjimenez.com)

## THE AIRBRUSH COMPANY

The airbrush Company has announced new products in the *Wilder* range: 20 new weathering oils that dry fast to a completely matt finish plus *Quick Mask*, a range of masking liquids available in five different colours for better visibility when working on all types of finishes.



Also new from *The Airbrush Company* and *Alclad II* is a series of *Mil-Spec Airbrush-Ready Enamel Paints* which can be used with any *Alclad*

*Surface Primers* and easily sealed for decaling and weathering using any varnish including *Alclad Aqua Gloss Acrylic Varnish* and *Alclad Klear Kote Varnishes*.

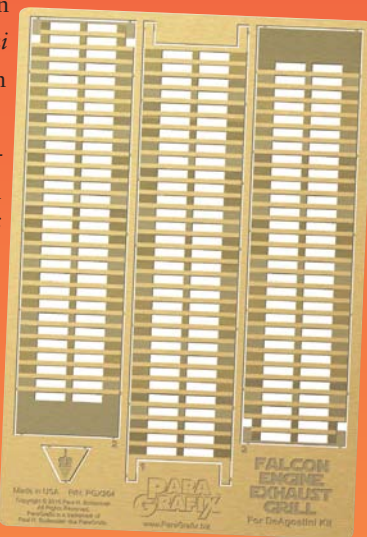
[www.airbrushes.com](http://www.airbrushes.com)

## PARAGRAFIX

### Millennium Falcon Engine Grill set

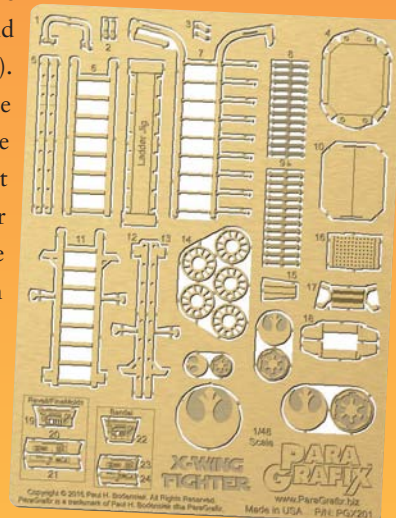
New from *ParaGrafix* is the main engine grill for the *DeAgostini Millennium Falcon* subscription kit.

This set includes 3 precision-etched panels that combine to fill the entire engine area of *DeAgostini's* studio scale *Millennium Falcon* kit, replicating the segmented engines as first seen in the *Special Edition* versions of the original trilogy of *Star Wars* movies. The panels provide a more pleasing effect when the lights are off and give the engine a more 3-dimensional appearance. The panels are keyed to aid in alignment and provide pre-installation strength. The rear of the photoetch is ribbed to make curving to the proper shape far easier, without having to anneal the brass. Two sets of backlight film are also included, giving builders the option of simulating the original plain white engine glow or the sometimes seen blue-edged glow. MSRP is \$49.95 and this item should be shipping by the time you read this.



### 1/48 scale X-Wing Fighter set

This set provides easily lit cockpit controls and engine exhausts for the 1/48 scale kits from *Revell*, *FineMolds* and *Bandai*. The main controls are based on the interior filming set used on *The Empire Strikes Back*. Also included are five boarding ladders in three different styles - two as used in *Star Wars* episode 4 (*A New Hope*) and one from Episode 5 (*Empire*). Two of the ladders can be made by simply folding the side rails into position, but options are also included for experienced builders to make more accurate ladders with round plastic or brass rod. MSRP \$26.95.



[www.paragrafix.com](http://www.paragrafix.com)



# may'Duj!\*

## Creating Custom Replicas' studio-scale Klingon D-7 miniature Jim Key



**B**ack in mid 2009 I decided to add the studio-scale *Klingon D-7* to my trio of medium scale original series *Trek* models (along with in-scale 37.25" *TOS Enterprise* pilot and production models). But before I get to that, I want to share a little of why we went deep into re-mastering this model for ourselves vs. just buying an available *Icons* or other limited release model kit and reworking one of those for kit production.

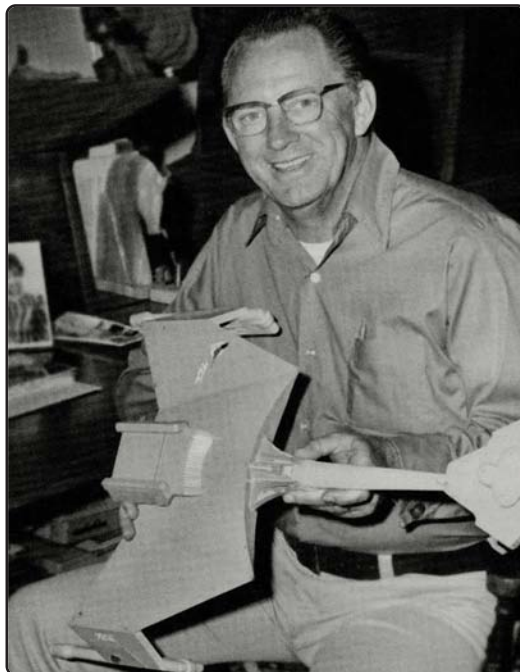
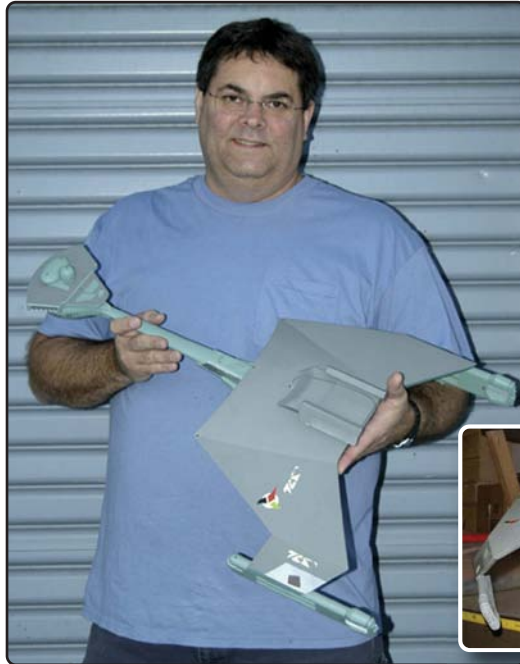
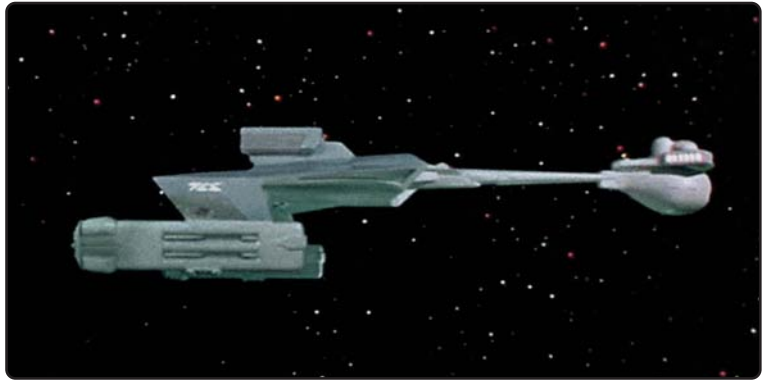
Having seen many of the studio-scale *Klingon D-7* models over the years since I've been in the collector kit business, I kept finding that no two were really accurate to the original filming miniature. That left me adapting, revising or simply trying to get one of these available kits to go together properly. And then, if there weren't metal supports in the neck or proper metal supports in the engine to wing areas, the model was doomed to a short existence before warping or becoming less than desirable. As a result it was costing my business more than it was worth to build these replicas for my customers.

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\*Klingon for Battle Cruiser!

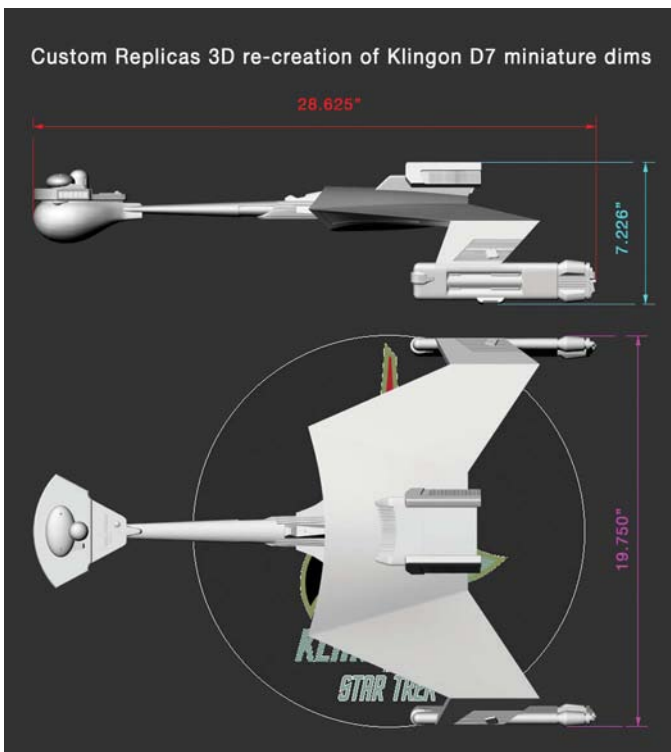
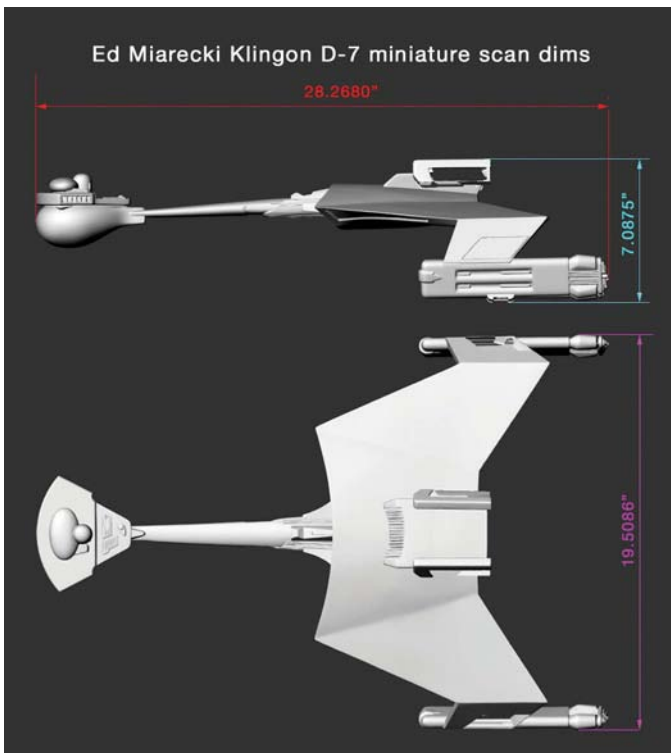
I gathered my team and asked, ‘Why are there so many discrepancies in all these kits?’ (mostly in the form of details and sizes). That prompted an intense R&D event on our part. At that time, my business was sharing the building with *HMS Creative Productions*, and *Trek* specialist, Steve Horch, who was right next door. I told him I wanted to create ‘*the quintessential studio-scale Klingon D-7*’. He laughed a bit and then said, ‘Well, unless you can grow it back up to its original size, how are you going to do that?’ I have to admit he had me at that point. That meant that all new patterns would have to be made at a slightly larger scale – only after we ascertained the original TV filming miniature’s prototype size.

For the longest time I kept hearing reports of the original TV miniature being between 28" and 28.5" in length. Exactly twice up from the original *AMT* (*ERTL*) model kit which is somewhere right around 14" in total length, depending upon how it is measured. I took what I blindly knew at the time and sat down with Steve Horch and asked, ‘What do you think it is?’ He then informed me that he was going to have Ed Miarecki’s copy casting of Matt Jefferies’ (miniature #2) *D-7* in the shop soon, and we could investigate it together. I remember photographing every detail of Ed’s copy casting for reference. I recently asked Ed, ‘Why all grey with only the graphics as colour?’ His recollections were that he was simply following the original *AMT* colour guides (photos) and could not discern any two or three tone (light



Right, top to bottom: original TV *D-7* screenshot – colour corrected, Steve Horch holding an original *ICONS* *D-7* miniature, Ed Miarecki *D-7* study model, Matt Jefferies holding original TV filming miniature.

Above: Gene Roddenberry TV *D-7* miniature.



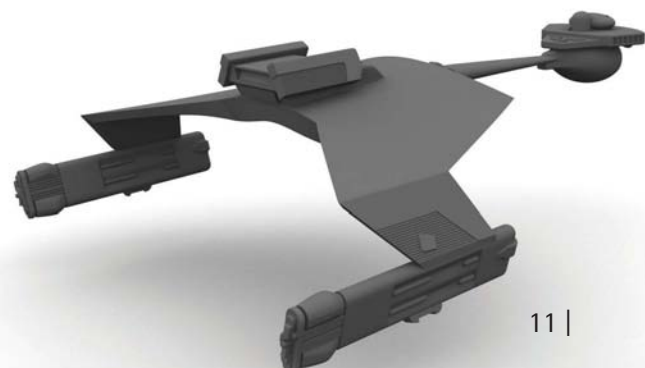
green, dark green, blue-purple grey) colours. This adds to the theory that Jefferies may have had them repainted (when they arrived from AMT) into the colour scheme that became the mint green-blue purple we see today.

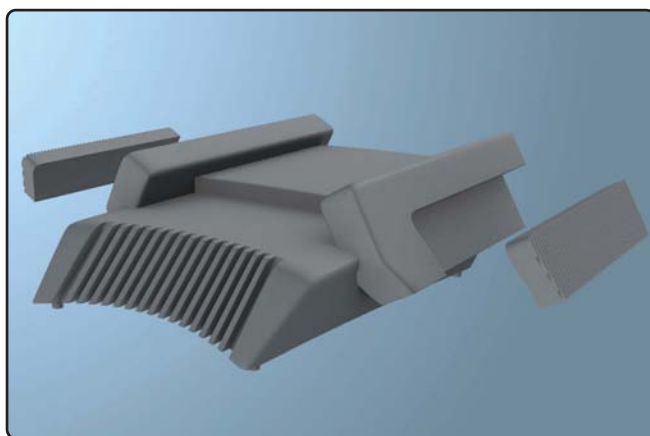
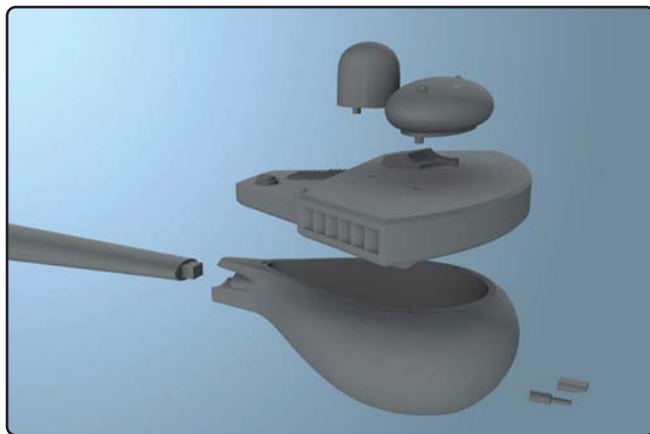
I was also investigating the Stephen Whitfield, aka 'Stephen Poe' (miniature #1) D-7 that had surfaced as well for auction, the latter reportedly having the only true vintage colourations. What I found truly spectacular about the Roddenberry prototype (miniature #1) given to Stephen Poe, was in the remaining saturation of the vintage colours: mint green and intermediate blue-grey – bordering on purplish-grey. Upon further investigation, I found that there was also a firm belief that though the original miniatures were essentially painted the same, Jefferies may have had one of them painted in a two-tone green (mint green and a slightly darker version of that colour) to help create detail separations (neck forward) for the camera to pick up on film since these miniatures would not be seen close up. However, the two-tone colouring remains speculation. To accommodate these beliefs, I had decided early on to include both paint schemes and simply let the modeller choose which version to apply.

Based on the belief that the original *Klingon D-7* miniature was 'most likely' around 28.5" (total length), I then did a few tests to figure out how much each of the copy-castings, that both Greg Jein and Ed Miarecki had made from the originals, shrank by. I came up with about .250" (1/4 inch) from the total length. Maybe a little over .125" (1/8 inch) from the sides and top to bottom. Not a lot, but when you then take a copy casting from a copy casting off the original (2 generations) you start losing a lot more (*Atomic City* at what is reported to be 28" long).

Left: Ed Miarecki D-7 miniature dimensions compared to Custom Replicas' 3D re-creation.

Below and next page top: Remainder, 3D previews of mater patterns that were created and rendered by John Ortmann Jr.





The model that *HMS Creative Productions* had from Ed Miarecki was in good shape, and seemed to possess all the original detailing (engines) that we wanted to copy. I co-produced the scanning operation that was set-up to scan Ed's *D-7* miniature. I later examined the scan and found that there were a lot of holes from areas that did not scan correctly and the model was not symmetrical. However, the main shapes were there and one side was better than the other, so I decided to hire my long-time 3D artist, John Ortmann Jr., who had previously worked on our 1/32 scale *LEM* and 1/12 scale *Gemini*. I sent the high resolution .OBJ scans to him with the caveat of recreating all the structures based on one side only, then mirroring everything to the opposite side along the centre line.

I liked the *Atomic City* effort, and *Icons* for that matter, but my major gripe was the extreme weight of the brick of resin that makes up the main body. I wanted a unique solution that would set ours apart from all others and make it easier to produce and more economical. I had John Ortmann Jr. hollow out the main body and then add twin ribs and an inner lip to help support and align the top

panel. The front centre section would now have a receiving box for the rear of the neck mast, that would act as an anchor point. The area in the middle was given a hole that could be used for the stand mast, or plugged if the model were to be hung with no belly impressions.

The neck was the next problem to solve as it is thin and not load bearing at all. I designed it to be cast using an insert method. I brazed two brass rectangular tubes together (vertically) to amass strength, and then loaded them into the mould – per neck casting. These are hidden within the structure and make for clean connection points into the rear of the ‘bulb’ and the front of the main body section.

The front ‘bulb’ section and bridge were essentially a redo on what had been used for *Icons*. The inner bulb was hollowed out to receive the upper triangular platform which holds the bridge components (flat spheroid and dome). Each pattern was pegged to fit into the upper platform and also contained a receiver slot at the rear for the neck post. A bit of a surprise for me was finding the canon barrel and ceiling block that are





inside the lower forward recess. I basically mimicked what I found on Ed's model and then put them into ours as well. Never found any good R&D to prove or disprove their existence, though.

Not sure what to designate the rear upper components that sit atop the main body except that of probably being the 'upper engine'. *Icons* had a main block piece that we could mould and replicate, though reflecting back on it now I would have separated the slanted twin side bars. The aluminium grates we did separate into a left and right section for ease of painting and assembly.

Once John Ortmann Jr. had completed the 3D files and we sized them to actual 'pattern grow size' we had them produced in high resolution *PolyJet* (*Objet*). Very little clean up of rapid prototype resolution lines at this scale made for fast production set up. All in all, a very smooth and reliable process.

We had to get the casting process down through repetition and practice in order to know exactly how to produce the resin parts. The body and top took quite a bit of banding and support since they were huge moulds that had to be poured outside of



the pressure tanks, demanding very calculated venting to avoid bubbles. The bulb, engines, and engine top blocks went much easier – as more predictable pressure type cast components.

I instructed my crew to produce enough parts for two really good prototype builds. I wanted to demonstrate, via the instructions and website previews, both colour schemes: single green, and two-tone green with the blue-purple-grey contrast. The amount of shrink on the parts was actually slightly less than predicted, even after several days to a week of letting the castings de-gas and reach their final stabilised sizes. I had hoped for a 28.5" length, but came up a little over that. Our TOS *D-7* model kit is probably the largest of any produced.

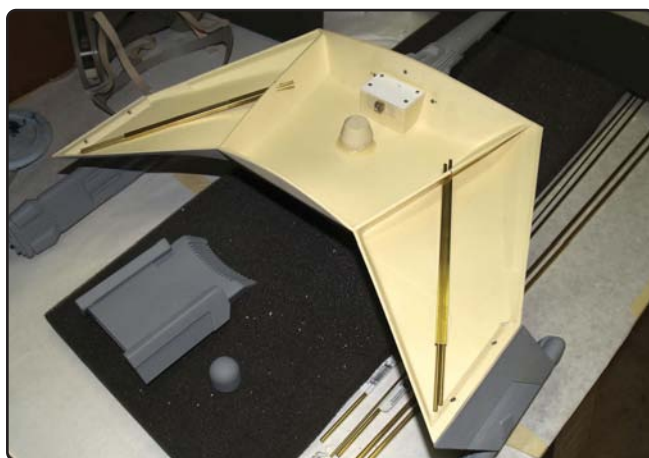
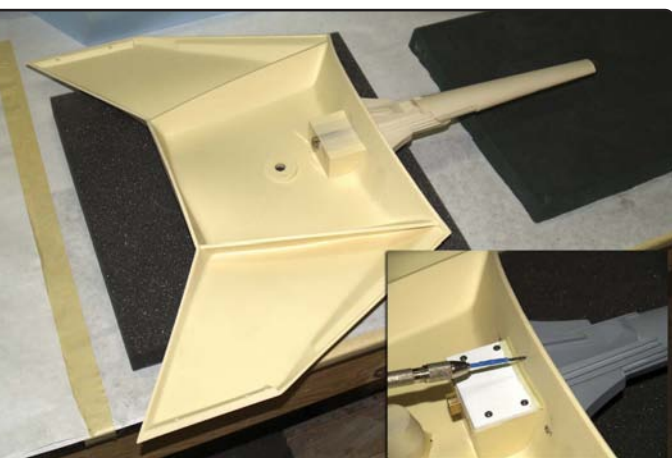
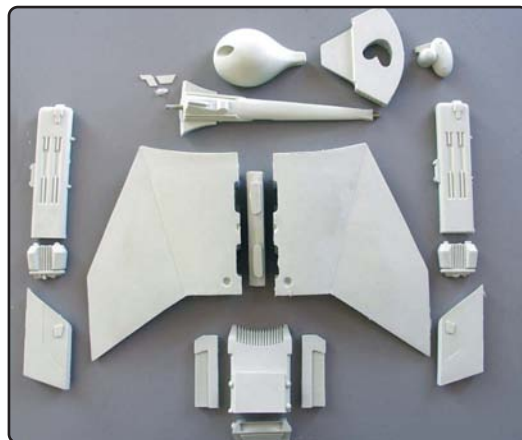
Without going into every single build step, the process was very straightforward. I had anticipated the lack of strength in the connection points where the engine nacelles attached to the main body. I devised a simplistic brass rod and tube solution that could be put inside the wing to help prevent torquing and downward bend from the nacelle solid resin weight.

The neck, having the brass inserts added for inner strength, made perfect connection points (tabs) for joining to the rear of the bulb and to the front of the main body. By fitting the rear through a hole and laying flat onto a box receiver (moulded into the body), a laser-cut acrylic block could then be used as a cover plate, assuring correct positioning. Small machine screws were used to keep the rear of the neck attached to the front of the main body. If the model were to be mounted atop of the stand post, a receiver cup could be glued above the hole to accept the stand

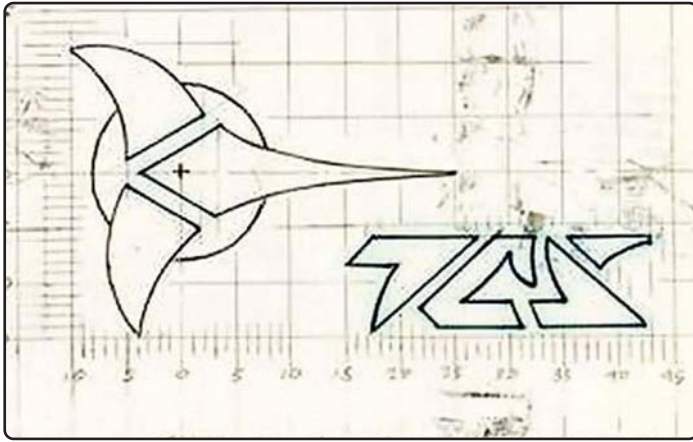
post. If not, a plug was provided to cover up the hole. All made so much easier by having the body hollow, with a separate topside. I guess this design was so well thought out that it merited being copied (in 3D) and scaled down from 1/300 to 1/350 by *Neisen Models*. I like to think that our kit was part of an evolution between the 2007 *Atomic City* era and the 2015 *Nice-N Models Design* era.

Before covering the actual finalisation of the two prototype builds, it is necessary to cover the stand. I wasn't happy with what I was seeing in other model builds of the *D-7*, as they seemed a bit small for the weight being supported. I decided on using a round platter and mast, which was also the design being used for my in-progress 37.25" (same scale) TOS *Enterprise*. The platter I designed was 16.5" in diameter, laser-cut from .250" black acrylic, onto which the *Klingon* logo was also

Above: *Atomic City* 1/300 scale *Klingon D-7*, Right: *Nice-N designs*' 1/350 downsize from *Custom Replicas*' *Klingon* 1/300 *D-7* model.







Top: laser-cut in varying layers of .250" and .125" acrylic with similar treatment for the lettering. A stencil was included so as to mask the lettering when paintwork was applied. The basic colour scheme revolved around the graphic that was originally designed by Matt Jefferies' *Klingon* logo.

Above: CR base concept.

With the stand completed, I now had a method of display to perch the model onto as we set about ascertaining the two colour schemes for the prototypes being assembled. Both would feature the subtle blue purple-grey; with one having a light mint green and the other having a two-tone light and slightly darker mint green. The only other colours are the metallic aluminium and gold. Chrome *Mylar* tape is used as well on the rear neck ridges and between the ridges on the upper engine front comb.

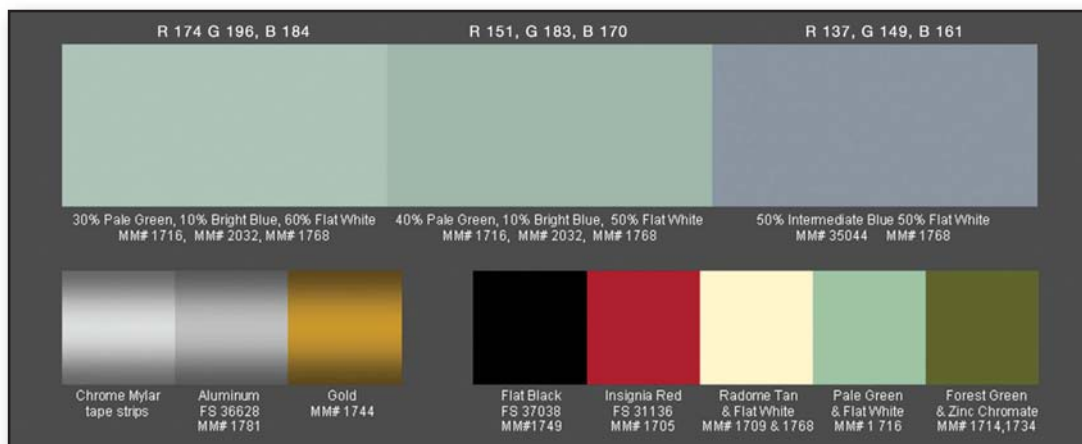
I went through weeks, if not a month, of agonising research to determine the colour scheme, based in part on what I saw in the Stephen Poe (Roddenberry) miniature auction photos. The toughest decision being the blue purple-grey, which is more bluish to my eye, while some would argue that it is more purple. The colour chart we used is offered here. Also, so that I could guide my

painter, I created two colour charts over the 3D renders that John Ortmann Jr. gave to me. The single green and two-tone green are both shown here. It should be noted that the underside is of the light or dark green, not like the topside. They are fully realised with the graphics in place as well.

Painting began on each with an automotive build-up primer layer to check for any surface irregularities, which could be wet-sanded down using 400 grit wet/dry sandpaper. If I recall correctly, the greens were applied first, then the topside blue purple grey, which also goes on the topside of the bulb triangular part. For expediency, the upper flat egg shape had two dots painted red, vs. the red plastic rod that Ed Miarecki used (giving a light housing effect).

Once the blue purple-grey was on, the addition of the chrome *Mylar* tape was applied to the neck and engine comb ridges.

No model is ever complete without the graphics/decals or final tweaks. The *D-7* is no exception – however, it never had much in the way



of weathering, registration numbers, stripes, markings, etc. Mainly, it has the two *Klingon* logos – topside and bottom on the main body, *Klingon* signage (lettering on the nacelle mounts) various triangles, rectangles, and even what appears to be twin infinity symbols. The windows were simply decals or representation, not designed to be lit up, like the *Enterprise* model.

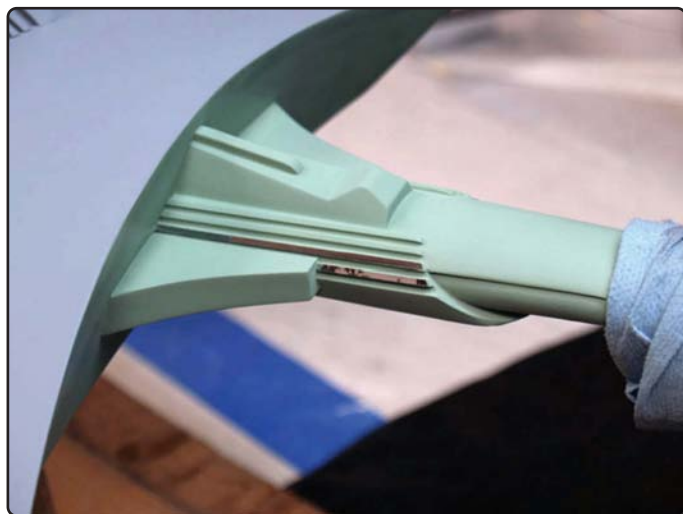
I wanted a really great method of applying the graphics and decided to spend a bit more to make

this model ‘unique’ amongst the others out there in the marketplace. I had the graphics already drawn up in vector, and sent them out to *All Out Graphics* in Canada to be made into dry transfers. I could get about five sets of logos per sheet, with an extra of all components for accidents or repairs. The same was done for the windows on a separate sheet. These graphics could be rubbed onto the finished model, then sealed under clear coat to prevent them from coming off.

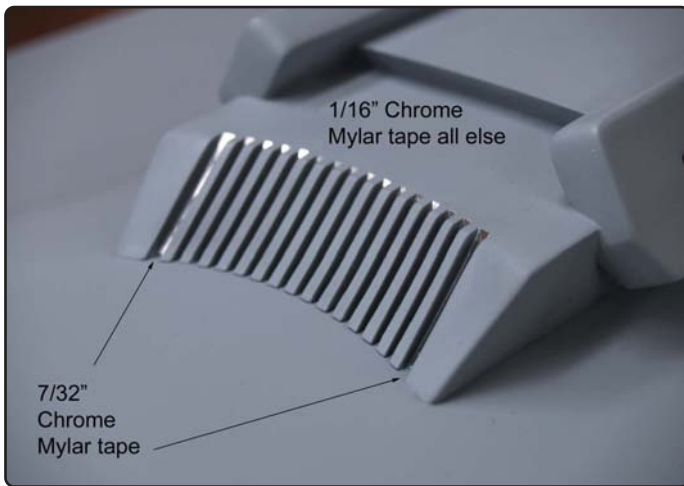
Top: *D-7* Colour chart.

Above: paint comparison.

Bottom right: colouration of bulb top surfaces. Bottom right: matching neck colouration.





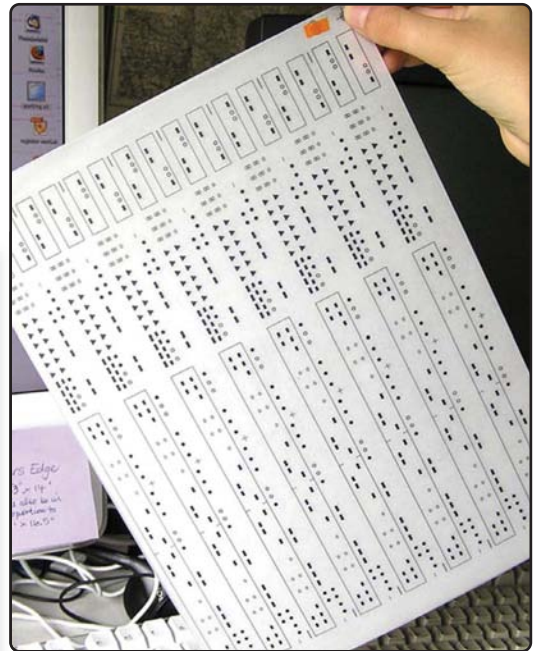


Top: Mylar tape detailing.

Right: 9"x12" dry transfer sheets created for the kit.

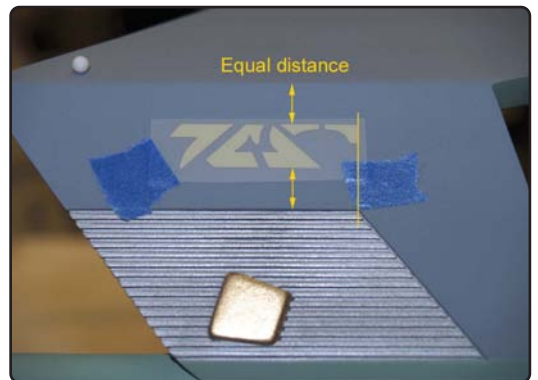
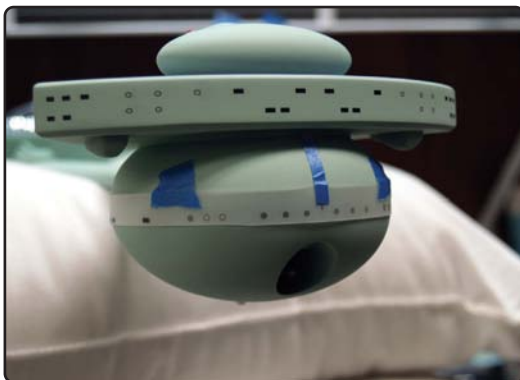
We did three final rounds of photography to get these two prototypes shown in the proper light – all shot in HDRI (High Dynamic Range Imagery), so as to get all the colourations correct. These final shots were then all masked against black with anticipated star field additions at a later time. The shots here are all sans the star field to make for cleaner presentation.

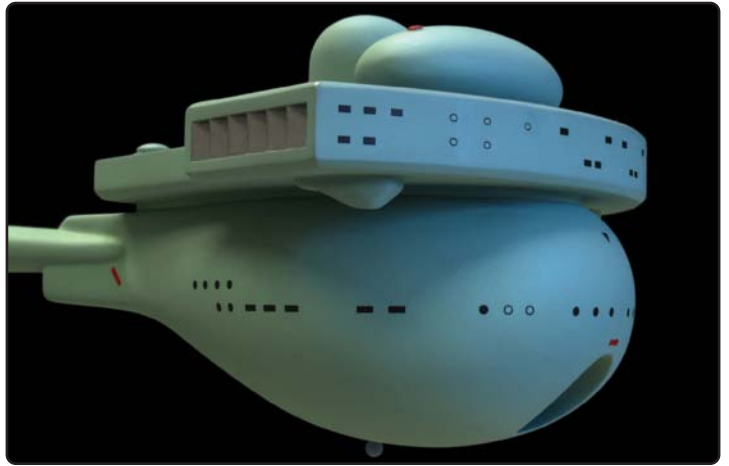
Here are the final beauty shots (see overleaf) taken for our studio-scale *Klingon D-7* miniature. It was a fantastic project to be a part of.



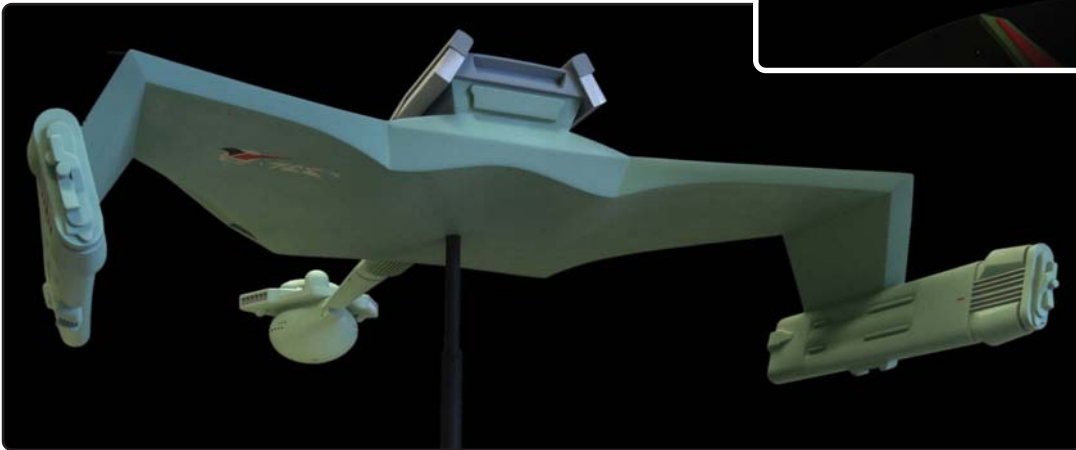
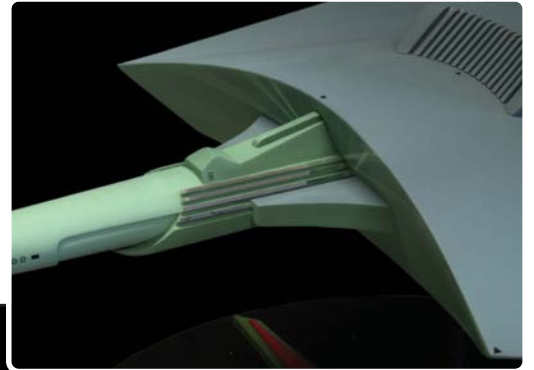
Above: final box-art cover built up from wire frame mesh

Bottom: dry transfers being added to front bulb. *Klingon* registry being added to nacelle mount.



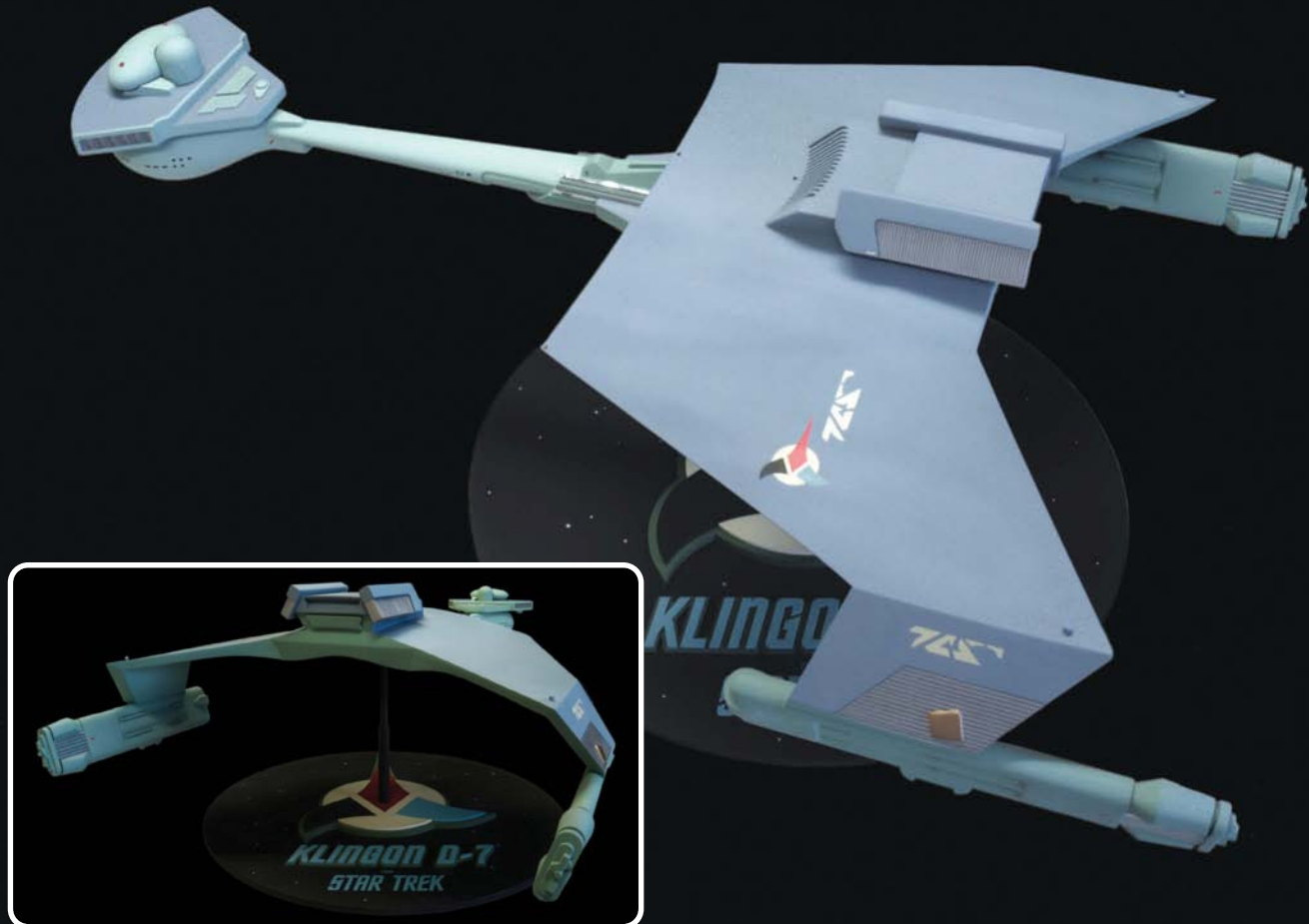


Top left /left:  
Klingon logo  
being added to  
main body.  
Top right:  
finished front  
bulb structure  
with windows.



Left: underside  
showing logo  
placement and  
stand mast.  
Above: D-7  
neck/waist.  
Bottom/overleaf:  
completed D-7  
Battle Cruiser.







# Masterful design

Andy Pearson builds Hostile Realms' Warship



**Manufacturer:** Wild House Models

**Scale:** 1:1400

**Materials:** Resin and photoetch

MODEL KITS FROM *WILD HOUSE* HAVE FEATURED IN THESE PAGES BEFORE and have been greeted with suitable enthusiasm on each occasion. This one is rather special even by their standards, being a design by Rick Sternbach, the man behind many special effects models including those used in various iterations of *Star Trek* and, in particular, the titular *Voyager* starship.

What you get for your money in the kit that builds the *Warship Kydoimos TTF-200869* (to give it its full designation) is 73 resin parts plus a photoetch sheet, the latter really bringing the model to life. What I got was a review kit and there were one or two points that I needed to be aware of in this context, not the least of which being that this probably wasn't the completely finished kit, at least not in every detail. The chaps at *Wild House* have mentioned a size discrepancy in some of the photoetch and there were obvious differences between the e-mailed instructions and the kit I now held in my hands.

These were minor differences and I mention them at this early stage of the review only because the eagle-eyed may spot the odd discrepancy in the accompanying images and mentioning them step-by-step would become tedious and even seem petty given the developmental stage of the kit.

There was very little initial clean-up required and, following that and a wash in warm, soapy water (most refreshing), the parts were primed with the *Halfords* white automotive product. The instructions were based round photographs of the actual parts which is always a great help and the build is unlikely to cause any problems for the modeller with any experience of resin kits but, at the risk of tedium, I'll repeat the cautions about using suitable dust protection when combining resin with abrasives.

The rear and forward hulls were both two-part builds, followed by a lower frontal weapons pod, then two side pods and the rear





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wings. I built all these and filled some of the seams with *Squadron White* putty. It's perhaps worth noting at this stage that a lighting kit is available for the *Kydoimos* but I didn't have that to work with. Having checked that everything fitted comfortably I then set about

- 1: the individual parts. 2: upper hull with primer.
- 3: optional part for stand mounting.
- 4: hull parts clamped. 5: wing and lower weapons pod.
- 6: some filler to seams.
- 7: early experiment in detail enhancement.
- 8: assembled hull.





9



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14

the detailing which was, in essence, a two-part process.

The moulding of the main panels and other hull features provided plenty of detail and on most of the surfaces below these there was a great deal of detail that seemed to represent smaller panels. Now the moulding here was somewhat softer and my first instinct was to try and sharpen some of this up using a combination of scalpel blades and etching tools. I did, in fact, try some experimental work on one of the less prominent areas of the lower hull but, whilst doing so, it occurred to me that the softness in the moulding was, perhaps, deliberate rather than being accounted for by the prototype nature of the model. Some further experimentation indicated that, using a combination of subtle shading and dry brush

work, this secondary detail gained quite an interesting depth.

I said earlier that the detailing was a two-part process and my tests on the less obvious moulded areas led to my approach with the main components of the model. There were no colour guides supplied with the kit's instructions, other than some shots of the finished model in what appeared to be a metallic grey. Essentially, you can have your *Kydoimos* in whatever colour you like and I (probably influenced by 2001 and *Space: 1999*, etc.) tend to take my spaceships white, unlike my coffee.

I next began to think about adding the detailing to the basic primed hull from the photoetch sheet supplied and there was a great deal of this, all beautifully produced. I initially needed to clean the

9: photoetch cut to size...

10: ...and in position.

11: aluminium foil duplicate.

12: clear inserts.

13: photoetch first fix.

14: further photoetch.





15



16



17



18



19



20

- 15-17: further photoetch.
- 18: hull ventral view.
- 19: hull dorsal view.
- 20: weapons pod with photoetch.

brass sheet and to do this I used a technique that I employ when cleaning the chrome/alloy wheels on my trusty *Cruiser*. Did you ever do the coin cleaning experiment as a kid which entailed leaving a copper coin overnight in a dish of cola (no brand names: no lawsuits)? Steeping the photoetch sheet in a mixture of cheap lemonade with a few drops of dishwashing liquid works in the same way by removing most of the surface blemishes, fingerprints and (one hopes) any chemical residue from the etching process. With regard to the car's wheels I simply squirt the mixture on, give it a few minutes and rinse off, as putting the wheels in the kitchen sink has caused domestic friction in the past. The photoetch parts really make a huge difference to the model and were very easy to apply using a thin formulation of superglue.

I said that I wouldn't bang on about minor discrepancies in the review kit but will mention the specific one that the chaps at *Wild House* had alerted me to but this only in the context of passing on what might be a useful trick. Two sections of photoetch were significantly over-size so I cut the first one into sections and fitted it round the curved edge of the hull in the designated area. For the second part on the other side of the hull I used an approach that made it easier to fit round the curve. Instead of using the photoetch, I duplicated the part by taking a sort of brass-rubbing from it using a section of cheap aluminium pie dish bought from a supermarket. This duplicated the detail quite well and, being much thinner than the material of the etched sheet, followed the curve more easily. I have used this technique before with some success and will, on occasion, take a precautionary 'rubbing' from etch





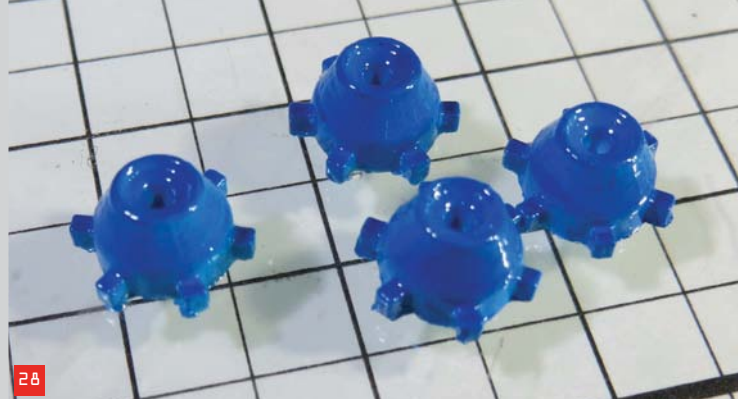
sheets and small plastic or resin components just in case the originals go AWOL. This technique also works well using the thicker brands of baking foil and, although the foil is less forgiving of handling being, well, *foil* it picks up even more detail. A way to overcome the handling problem to some degree is to give the back of the foil duplicate some coats of superglue and let it dry.

With all the photoetch components in place the model received further coats of white primer and this was followed by the painting stage. Of course there are whites and there are whites and so I gathered together all the brands of white acrylic that I had in stock and began to pick out areas in slightly differing shades and intensities on top of the white primer. I confess that some of these seemed subtle to the point of ‘Why bother?’ but I wanted to produce an overall effect of slightly

differing surfaces that were part of a corporate whole. I imagine that last sentence sounds as pretentious to you as it does to me but you perhaps know what I mean.

Putting the paint aside and after a suitable drying time, I picked up my pencils. The white on white paint scheme looked reasonable but I felt the need to enhance some of the panel detail – and particularly the resin areas mentioned earlier. Using 6H and 3H graphite pencils sharpened to a vampire-slaying point, I began to run the finest of pencil ‘shadows’ round various areas, assuming a light source from directly above the model. I can best describe the technique here as adding some lines then leaving the model for a while before adding some more. This avoids getting carried away with the process and overdoing things.

20: dorsal view with second primer coat.  
21: ventral view with second primer coat.  
23: wing detail.  
24: pod detail.  
25: upper hull overview pre-detailling.  
26: upper hull with some shading added.



- 27: main engines:  
the two on the  
right post-  
polishing.
- 28: engine inserts.
- 29: clear pod insert  
with paint.
- 30: assembled  
engines  
in position.
- 31: small rail gun  
components.
- 32: stern guns  
in position.

I next added some further shading using a combination of graphite powder (from the aforementioned pencils rubbed on fine abrasive paper) and very light grey and blue pigment powders but was very sparing in the use of this technique.

With the bulk of the model finished there were three main component areas to add: the engines, the weapons and ten translucent inserts which may (or may not) serve as some sort of *Bussard* collectors. In the case of the latter these are obviously designed to be enhanced by the model's lighting kit, which I wasn't including. The initial temptation was to paint them in a clear colour emulating the sort of arrangement seen on the *USS Enterprise* or, more relevantly given the kit designer's pedigree, *Voyager*.

In the end I chose to airbrush these with *Tamiya X-19 Smoke* which enhanced both the gloss finish and the moulding whilst blending with the overall feel of the model. I should add that a couple of the inserts did need a little work with an abrasive stick to aid their fit. There's actually a rather odd story relating to these but one probably more relevant to the pages of *Fortean Times* than here so I'll save that for another time and place.

The four engines (*NOVACORP DX5 Sublight Drives* for you techies) were airbrushed with *Humbrol 27003 Metal Cote* which polishes up when dry to give a nice clunky heavy engineering feel, whilst the separate engine cores were painted clear blue on white.

The *Kydoimos* is a warship and is, to paraphrase the late Douglas Adams, horribly be-weaponed,





being equipped with fourteen externally mounted magnetic rail guns. I wanted to differentiate these from the main hull colours so left them in their original resin colour but added some very thin translucent blue washes. I also left the addition of the guns to the penultimate step of the build, being aware of the possibility of them being accidentally pinged off the model and subsequently devoured by the carpet monster.



The final stage of the build was the addition of the *Kydoimos* nameplates and the *TTF-200869* designation plaques. These were part of the photoetch sheets and it occurred to me that they might look rather good in

33: forward weapons pod.

34-35: name plates.







their original brass finish. To that end I polished them to a high finish using *Brasso* wadding and used them 'as-is', simply adding a touch of red behind the cut-out star logo on the name plates. I like to picture tiny pressure-suited figures hanging in space with their dusters and tins of metal polish.

That's probably quite a nice idea for a diorama and I look forward to seeing the results of your work.

*Review kit kindly supplied by  
Wild House models.  
[www.wildhousemodels.com](http://www.wildhousemodels.com)*

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# Alpha Male

## Mike Reccia builds Resin From Space's Alan Carter figure

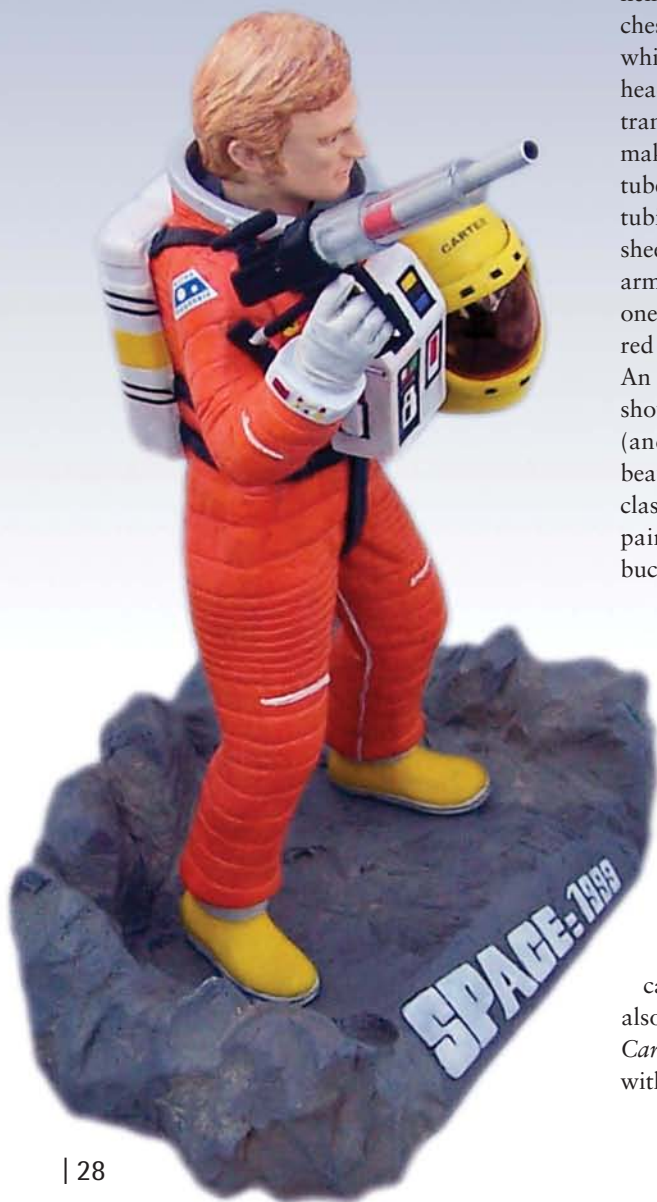
IN THE FORTY-PLUS YEARS SINCE *SPACE:1999* FIRST AIRED we've seen all kinds of garage and mainstream kits based on craft and props from the classic series become available. Strangely, however, there's been an absolute dearth of *figure* kits based on the show. Until now. ...Enter *Resin From Space* and their growing collection of 1/8th scale 1999 figures featuring the main characters from *Space* in action poses, plus a couple of season two monsters

thrown in for good measure. A review sample of one of their releases – a kit of chief *Eagle* pilot and fan favourite *Alan Carter* – recently landed on my desk and instantly became one of the subjects lined up for this Volume that I couldn't resist coveting and putting together myself.

### Moon-based Alphan

The review sample depicts *Carter* in his *Alphan* spacesuit striking an heroic pose holding a laser rifle aloft in one hand and clutching the suit's helmet in the other. Parts comprise the body with chest and back packs and all detailing in place, to which are added the arms with integral hands, the head, the helmet with separate visor frame and transparent orange bubble, and a laser rifle which makes up from a resin stock, a length of metal tube for the barrel and two sections of transparent tubing which slide over this. Also included is a sheet of decals featuring *Moonbase Alpha* logos, arm badges, a selection of numbers in the season one typeface for the front and back packs and a red decal that wraps around the barrel of the rifle. An *Aurora*-style rocky base emblazoned with the show's distinctive logo completes the line-up. First (and lasting) impressions are that this is a beautifully sculpted piece. The detailing is first class, and every feature of the suit has been painstakingly recreated, from the straps and buckles to the zips, the trademark concertina collar, and even a tiny *Comlock*. Crucially, the feature that makes or breaks any figure kit – the head – perfectly captures a likeness of actor Nick Tate... indeed, Nick himself is impressed with the sculpt and has approved the kit.

It should be noted that *Resin From Space* has devised a modular approach to certain of these kits, allowing modellers to choose from a number of pose options when buying a figure. For example, in *Alan's* case, a left arm depicted 'relaxed' by his side is also available, as is an open-visor helmet with *Carter's* head sculpted inside it. The base provided with our sample is also an 'add-on' extra, with an







*Eagle* cockpit bulkhead base being offered as an alternative.

### Simple assembly

The primary stage of this build consists of nothing more complicated than sticking the arms to the body (I used two-part epoxy for strength). A little filler was needed around the arm to shoulder joints where there were slight

gaps... nothing major and quickly fixed. The *real* skill in making this kit comes at painting stage, and I approached this aspect of the build next, leaving assembly of the helmet and rifle until after I'd finished the body and head.

### Painting

Following a cleaning of all parts with methylated spirits to remove any lingering mould release agent I coated body and head with *Tamiya Fine Surface Primer*, then sprayed the body with *Humbrol Gloss*

*Orange* from a can, having first masked off the hands, feet, and chest and back packs. The next task was to pick out the various straps and buckles that hold the packs in place on the 'real' suit in matt black with a brush – a delicate operation as it's very easy to slip when painting the sides of the straps and mark the orange base coat (orange being a devil of a colour to subsequently 'patch' and repaint with a brush).

### Hands and feet

The gloved hands were up next and with these I painted the outers with a wash of light grey (in studying photographs of the actual prop suits the gloves, which at first glance appear to be white, can be seen to be darker than their white 'cuffs'). The palms of the gloves used in the series are actually black so this detailing was now carefully added using a brush.

Next, the uppers of the boots were brush painted in several coats of matt yellow, and the indented line on the upper sole that circles each boot was recreated courtesy of a 0.1mm fine line permanent pen. The ankle seals and neck ring seal were then picked out with a brush using *Matt Aluminium* from *Ammo Mig's* superb *Metal Acrylic Colour* range. Following a coat of *Citadel Purity Seal* to the entire body the boots would be buffed to a shine with a tissue at finishing stage.

### Life support packs

In preparation for the detailing to come the chest and back packs were treated to a coat of matt white applied with a brush and I then set about painting on the various colour blocks that feature on them. With these completed, I used thin black adhesive vinyl strips to border the colour detailing rather than attempt to paint or draw in the lines, which would have resulted in a far less neat finish. Black vinyl strips were also used to create the horizontal striping which features on the back pack. A suitable decal was fished out from the spares box to represent the circular dial which features top left on the back pack, and this was positioned over the slightly raised rectangle sculpted in this area (a tiny error in detailing but one which is quickly and easily rectified).

With chest and back packs fully detailed and their black rectangles that feature the suit identification number painted on, I attempted to apply a set of numbers from the decal sheet. At this point I discovered the supplied decals to be incredibly thin, that they release from their







### Comlock

The tiny *Comlock* was picked out in a mid grey and its coloured buttons painted on with a brush. I then cut out a tiny rectangle of adhesive white label and drew onto this a head and shoulders silhouette with a permanent fine-line pen, plus the various lines that surround this identifying 'photograph' on the series props, applying this to the side of the *Comlock*.

### Face

Painting faces has never been my strong point, but, steadily, and as I tackle more figures, I'm learning and becoming a little more confident in this area. I was also quite pleased with the *Moebius Penguin* face I'd painted for a review of that kit in Volume 42, and so approached *Alan Carter* in a similar manner, carefully brushing weathering pigments over a base coat of flesh to bring out the various highlights and shadows in the face. Following a sealing coat of *Humbrol Matt Varnish*, a wash of the base flesh colour was



backing almost immediately on contact with warm water and that, if handled for any length of time, the ink starts to run and they disintegrate and curl up on themselves. Having tried unsuccessfully to apply a set of numbers on two occasions I decided to cut a third set from the sheet and glue these in place still attached to their backing sheet (more on this later). I then painted around the cut edges to disguise the fact that the numbers are slightly raised and coated chest and back packs with a spray of *Citadel Purity Seal* to protect the detailing and tie everything together.





then applied over the detailing to soften and blend in the pigments followed by a further coat of the varnish. Nick Tate's hair was quite light brown in colour in the seventies – almost blonde – so I approached this feature in two stages. First a coat of very light brown with a little yellow added was brush-applied to the hair and eyebrows. Once this was dry I then ran brown panel line wash into the depressions and dabbed this off using a tissue until I was satisfied with the look. The entire head, once the eyes and lips had been picked out, was then treated to a final coat of *Matt Varnish* and glued to the body using two-part epoxy.

### Helmet

The helmet is a hollow cast piece and, once this and its separate visor frame had been primed and coated in *Signal Yellow* from a rattle can car spray, the inside was brush painted in matt black, as was the front face of the raised, curved section on top of the piece. Rather than brush paint the rectangular black depressions in the visor frame I used tiny rectangles of the aforementioned vinyl striping to fill these, again resulting in a far neater appearance than I could ever have achieved using a brush.



doubled back on themselves so that both faces were adhesive, to hold the two pieces together. The completed sub-assembly was then glued in position on the helmet using PVA glue and was held in place with pieces of masking tape until this had set firm.

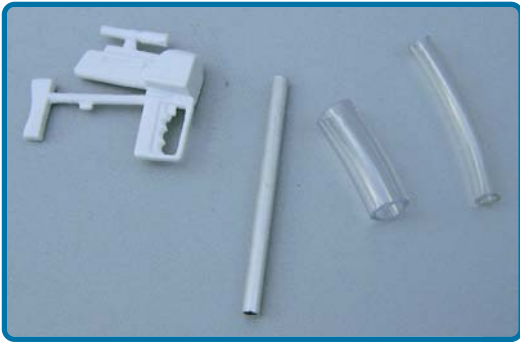
By this point I'd worked out that if I sat the 'Carter' decal on the helmet then brush-applied a tiny amount of warm water to it, and if I was quick and gentle in parting it from its backing with the brush, I *might* just be able to slide the decal into position without it disintegrating or folding on itself. On my second attempt (three 'Carter' decals are provided) I was successful, and I subsequently used the same method to apply the horizontal black banding decal to the back of the helmet. When both decals had dried thoroughly I applied a coat of *Purity Seal* to the helmet to seal them in place.



The orange bubble visor is a very thin, delicate piece, and care needed to be taken when trimming this to size. I at first attempted to glue the bubble into the visor frame using PVA (as superglue would have fogged the transparency) but, when this proved to be too weak to hold the part in place, I resorted to tiny strips of masking tape,







### Laser Rifle

The metal tube length mentioned earlier forms the barrel of the rifle, and is supplied over-length when measured against the blueprint that comes with the instructions. In order to locate this securely into the resin stock, I therefore drilled a hole into the front face of the piece and superglued the barrel into this down to the correct length. I then test fitted the two lengths of flexible transparent tube over the barrel and found them to be quite a tight fit. Instead of using these I elected instead to replace them with two rigid transparent pieces razor-sawed from the body and cap of a ballpoint pen. Before gluing these in place I applied a band of red adhesive vinyl to the barrel to replace the red decal supplied with the kit.

### Moon-Base

Initially, and having primed the base, I had finished it in browns to represent a typical planet surface visited by the *Alphans*. I then cursed myself for my stupidity, realising that I should have more appropriately finished this as a moon surface (even though *Alan* is not wearing his helmet!). I therefore repainted the base with a spray of mid grey and brush-applied a contrast grey wash, picking out the **Space: 1999** logo in matt white before coating the whole thing with a spray of *Purity Seal*.



### Final Moves

Contrast grey weathering pigment was applied to the suit and straps, a dark yellow wash to the folds in the suit, the cuff ring detailing was picked out with a fine brush, the sleeve decals were added (again by cutting these out and gluing them to the arms) and the *Moonbase Alpha* logos replaced by a couple I had in the spares box. The laser rifle was then superglued to *Alan's* right hand, his helmet placed in the crook of his left arm and there he stood – *finished*.

### Conclusion

Exquisitely detailed. Beautifully cast. The decals are a tad fiddly and delicate but with a little lateral thinking *can* be coaxied into performing. At the time of writing *Resin from Space* have just given us sight of their upcoming *Paul Morrow* figure and a *Bergman* release is also in the pipeline. In each case the sculpts of these heads are, in your ole' Ed's humble opinion, *superb*. If I can find the time and the room (*Hah!*) I will definitely be sending for companions to keep *Alan* company.

A highly recommended kit.



*Review sample kindly supplied by  
Resin from Space.  
[www.resinfromspace.com](http://www.resinfromspace.com)*





# RESTORING A LEGEND – PART 1

A history of the Starship Enterprise,  
from its construction in 1964 to the restoration of 2016

Gary Kerr

## Introduction

BACK IN 2012, I WROTE A MULTI-PART ARTICLE FOR *SCI-FI & FANTASY MODELLER* on designing Polar Lights' 1:350 scale kit of the original series (TOS) *Enterprise*. Since then, I've been a member of the *Smithsonian Institution's Special Advisory Committee* for the restoration of the 11-foot model of the original *Starship Enterprise*, and have had access to an unprecedented amount of reference material on the model, and to the model itself. As a result, I was finally able to answer many of my questions about the model, but I also encountered a few new questions.

In this multi-part article I'll retrace the history of the model, describe how we documented and recreated missing parts, and examine in detail the changes that the model underwent over time.

In the mid-1960s nobody knew what a 'starship' was supposed to look like, so after the large studio

model was designed and built, it went through a series of revisions until Roddenberry was satisfied with the results. As most *Star Trek* fans know, the four main stages in the evolution of the *Enterprise* have been dubbed the Rollout, 1st Pilot, 2nd Pilot, and Production versions – plus a couple of in-between versions. We were never supposed to see the earlier iterations of the ship, but the time and expense required to produce spfx footage made it necessary to use nearly every scrap of film that was shot. Before we get ahead of ourselves in this story, we should start at the very beginning.

## In the Beginning...

In the early 1960s, an ex-pilot, former LA cop, and writer named Gene Roddenberry was trying to get a new TV show off the ground. Roddenberry had previously written scripts for a variety of TV shows – westerns, police dramas, and medical dramas, and had just created the

short-lived, military-themed series called *The Lieutenant*. His proposed new show, a science fiction drama called ‘*Star Trek*’, was unlike anything that had appeared on television before: a series that touched on various social issues as it chronicled the adventures of the multi-ethnic crew aboard a starship as they explore the galaxy.

The creation of the *Enterprise* occurred during the hectic pre-production phase of *Star Trek*’s original pilot episode entitled *The Cage*. Pato Guzman served as the pilot’s Art Director, and he had the formidable task of creating a futuristic universe – and a spaceship that was unlike anything that had come before. Gene Roddenberry famously did not want his new ship to look like a flying saucer or a flame-belching rocketship, so Guzman had to come up with something completely different. This new spaceship, which would be one of the main stars of the show, also had to be totally believable, since if the audience didn’t ‘buy’ the spaceship it would be tough to sell them on the other ‘far out’ aspects of the show.

Guzman and his assistant, Walter M. ‘Matt’ Jefferies, drew a number of concept sketches of the ship’s exterior under Roddenberry’s watchful eye. After Guzman became homesick and returned to his native Chile, Jefferies continued to work on the design of the ship’s exterior and bridge. A series of individuals filled in for Guzman’s position as Art Director. First came Franz Bachelin, and when Bachelin retired, following *The Cage*, he was replaced by Rolland M. Brooks. Matt Jefferies finally assumed the position of Art Director for the series.

Interestingly, *Lincoln Enterprises*, the mail order business that Roddenberry later created to sell *Star Trek* merchandise, sold a set of concept sketches of art from Jefferies, Guzman, and possibly Bachelin. *Star Trek* graphic designer and historian, Mike Okuda, says that the original artwork was redrawn to an unknown extent for *Lincoln Enterprises*. Mike believes that the idea of a spaceship consisting of separate modules, connected by pylons, originated with Guzman, but the actual design of the *Enterprise* was Matt Jefferies’ creation.

After going through hundreds of pages of concept drawings, Jefferies finally arrived at a preliminary design that he liked, and he made a small wooden model to show to Roddenberry and



the execs at *NBC*. Roddenberry liked the design – except he was holding the model upside-down. Jefferies eventually persuaded Roddenberry that the right-side up version was preferable, and he set about drawing blueprints for a detailed proof-of-concept model that would be one-quarter the size of the planned studio miniature.

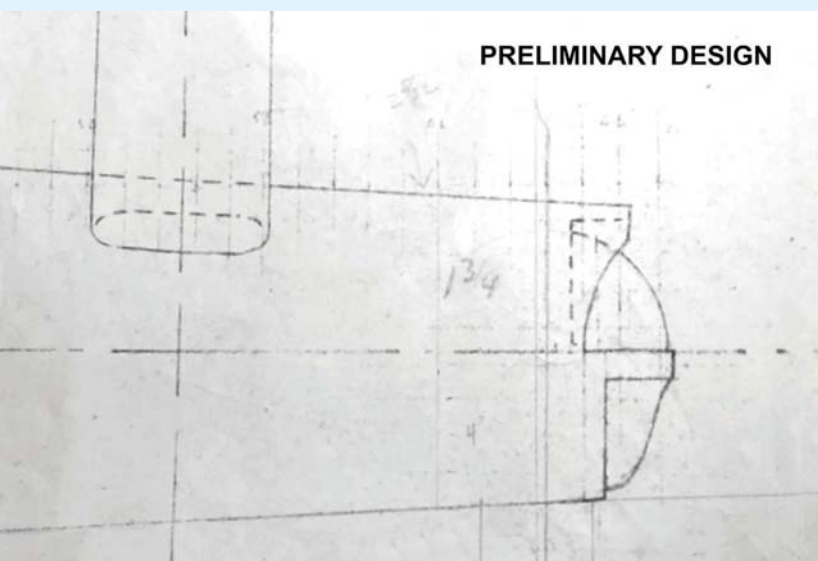
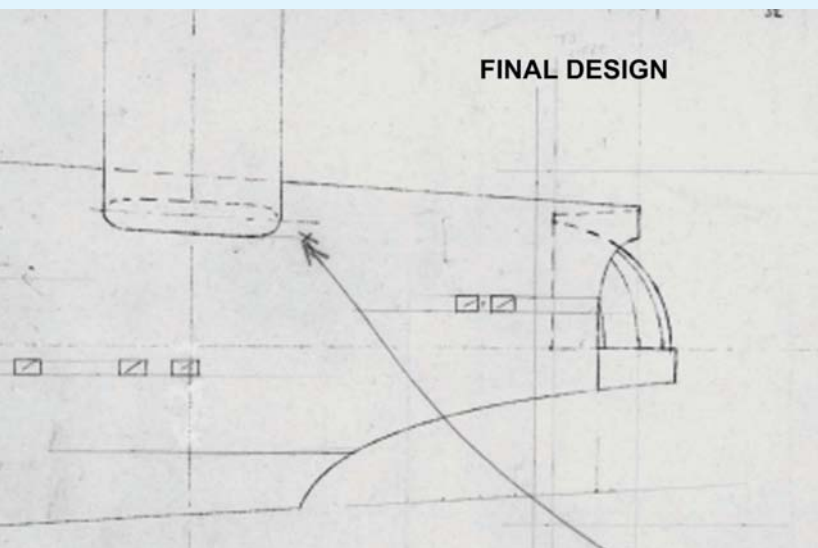
### Back to the drawing board

The only two sheets of *Enterprise* studio plans known to exist were in the possession of Richard Datin, the man who eventually built both the 3-foot and 11-foot *Enterprise* models. One undated sheet, which measures 28" x 43", features an earlier and smaller version of the ship. A later 31" x 59" sheet, dated 11-7-64, more closely resembles the final design of the ship. Both plans are relatively simplistic, with just a left profile and top plan view, plus a handful of detail drawings. Both drawings are annotated with a smattering of mathematical calculations. Remember – these plans were drawn three years before Texas Instruments invented the first handheld calculator. The original drawings may have been rather bare-bones, but the design was fleshed out in lengthy discussions between Jefferies and Datin.

The *Enterprise* drawing in the later and larger sheet is essentially the same as the 1st Pilot model,

Above: Richard Datin poses with the sole surviving set of original studio plans of the *Enterprise* in his apartment in Reno, Nevada, circa 2003. Photo c/o Paul M. Newitt.





If you multiply these dimensions by four, the overall length of the ship is about 1.6" longer than the 11-foot miniature, but the other three dimensions are less than an inch more than the corresponding dimensions on the studio model.

The earlier, one-sheet plan provides an interesting look at the previous incarnation of the ship. This spaceship was similar to that of the *Enterprise* that we know today, with a few notable exceptions. A bulbous radome originally covered the deflector area at the front of the secondary hull, but was annotated with 'DO NOT BUILD THIS NOSE'. A similar note was annotated onto the original, more upright saucer pylon, and a more streamlined version was added at the edge of the plan. The hangar bay at the end of the secondary hull was much like the final version, but there was no scalloped area under the fantail. Instead, another set of lower hangar bay doors mirrored the upper ones, but these doors were shaped differently and were stretched more vertically. No windows are shown anywhere on the plan.

The most glaring difference between the two plans is in the much smaller theoretical size of the earlier design, with overall dimensions of 543' overall length, 235' width, and 140' height. To get a handle on how much smaller the earlier 543' design would have been, relative to the final 947' ship, compare the original 18" AMT kit of the *Enterprise* with Round 2's 32.5" 1/350 scale kit. Their relative sizes are about the same as the relative sizes of the full-size spacecraft! The scales annotated on the early plan are Scale = 3"=1'-0" and 1"=14.5'. The dimensions of the one quarter size model on the plan are:  
Overall length: 34"  
Nacelle length: 18-1/4"  
Saucer diameter: 15"

Above: comparison of the original design of the secondary hull and hangar bay with the final one.

Scan of the *Enterprise* studio plan made for the author by Richard Datin.

Top right: Richard Datin shows the revised 34" prototype model of the *Enterprise* to Gene Roddenberry on the *Rigel VII* set.

with a few exceptions. For example, the sides of the saucer were much more vertical, similar to those on the Refit *Enterprise*, but a more-slanted side was pencilled into the drawing. The nacelle recesses and control reactor were present, but a placeholder for an intercooler was only roughly pencilled-in. The window arrangement on the lower saucer was drawn onto the plan after it was printed. The only scales given on the sheet are 'Space Ship Miniature - Full Size & 3" = 1'-0" to Large Miniature'.

The dimensions of the '3-footer' on the later plan are as follows:  
Overall length: 33-15/16"  
Nacelle length: 18-1/4"  
Saucer diameter: 14-15/16"  
Secondary hull length (excluding deflector dish): 12-1/32"





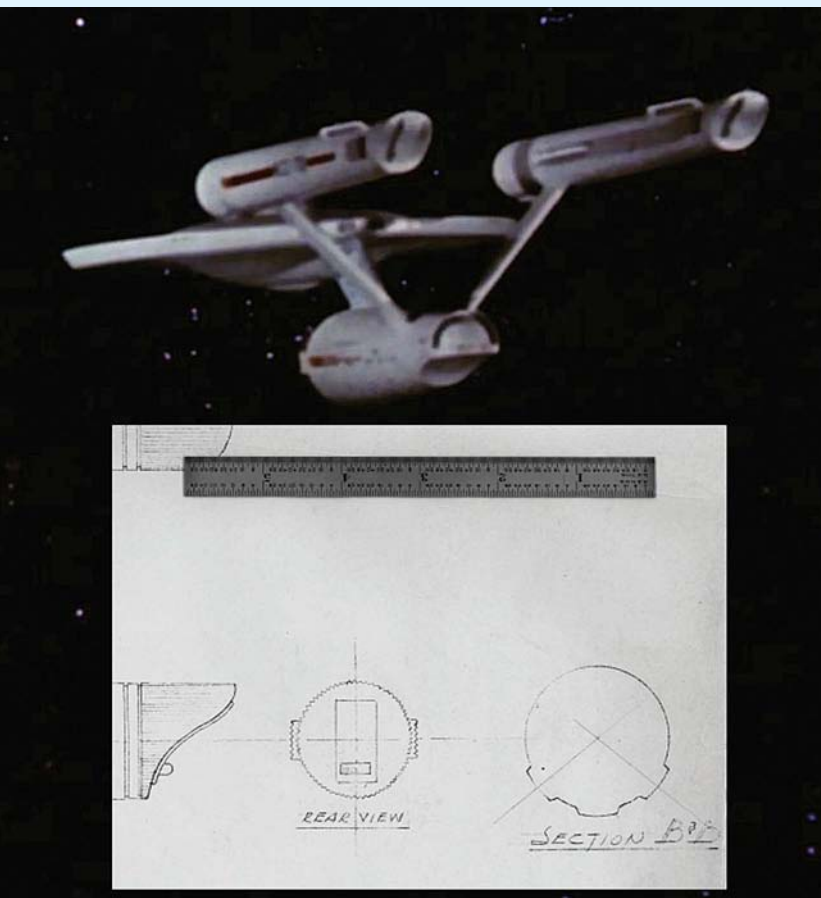
The men who built the 11-foot *Enterprise*: (left to right) Richard C. Datin, Vern Sion, Mel Keys, and (inset) *Production Models Shop* owner, Volmer Jensen, pose with the 11-footer during its rollout on December 29, 1964. Photo from the collection of Volmer Jensen, c/o Mel & Steven Keys.



Rear quarter view of the 11-foot *Enterprise* model during its rollout. Items of interest include: the off-white intercoolers, control reactor loop, and bridge turbolift; the grill-free port nacelle recess; clear hangar bay dome; lack of details (no frame numbers, no fantail landing lights, and plain upper saucer); and the glossy blue saucer pylon. Photo from the collection of Volmer Jensen, c/o Mel & Steven Keys.



Right: the left side of the 3-foot model, as it stands in for the not-yet-finished 11-footer in *The Cage*. Note the off-white impulse deck and the glossy blue finish on the 'neck'.



Above: as the 3-footer zooms away from the camera in the original pilot episode, we can see details on the rear of the nacelle endcaps that weren't present on the 11-footer. Scan of the *Enterprise* studio plan made for the author by Richard Datin.

These dimensions are essentially exactly the same as those on the later drawing, but I noticed that something was odd. A scale of 1" = 14.5' works out to 1:174 scale. 1:174 is half of 1:87 scale, which is also known as HO-scale, a popular scale for model railroads in the US. Why would Jefferies choose this odd scale? Did the fact that the man who was selected to build both the 3 and 11-foot models, Richard Datin, was an avid railroad buff factor into his decision?

Something else was odd. If the theoretical spaceship was 543' long, a 1:174 scale model

would be 37.45" long, and this is 3.45" longer than the ship in the drawing. A 'four times' model would be almost 12.5 feet long! I checked the other full-scale dimensions against those on the sheet and found that the entire drawing was about 91% the size of a true 1:174 scale model.

Yet another oddity: Jefferies had added some detail drawings and dimensions of the impulse deck to these earlier plans, and my ruler showed that the dimensions were actual size, and *weren't* shrunk to 91%. In addition, the drawings of the impulse deck, the wooden 'bolt cover' (located on the aft portion of the upper saucer), and plan view of the teardrop-shaped B/C deck accurately reflect the final design, even though the later-dated sheet doesn't. All this evidence indicates that Jefferies had added these updated detail drawings after the spaceship drawing had been shrunk. Obviously, updating blueprints was not a simple and tidy process in the days before computer-aided drafting.

The way I reconstruct the story, Jefferies originally drew plans for a much smaller *Enterprise* at half of HO-scale. The 'four times' studio miniature would have been too large to be practical – possibly because of limited studio space for filming, because of size limitations of construction materials (e.g., sheets of *Royalite* plastic) and/or fabricating equipment, or all the above. Consequently, the plans were shrunk to 91% of their original size, which would yield a 34" prototype and a 'four times' miniature that was roughly 11 feet long. Someone must have decided that the theoretical 543' spaceship was too small, so Jefferies drew a more refined plan, again with a 34" spaceship to keep the 'four times' model a reasonable size, but this time the plan represented a much larger theoretical spaceship. We still don't know how Jefferies arrived at an overall length of 947' for the *Enterprise*, but 947' is almost exactly 1.75 times the length of the original iteration of the ship. Coincidence or not?

Interestingly, this futuristic spaceship incorporated some elements from Matt Jefferies' past. Jefferies had flown on a variety of bombers in the European Theater during the Second World War, and several features of these bombers, particularly the B-17, found their way into the design of the *Enterprise*. Doug Drexler, noted *Trek* visual effects artist and designer, has noticed a distinct similarity between the front ends of the starship's nacelles and the engine nacelles of a

*B-17*. The ‘intercooler’ at the front of the inboard nacelle recess on the *Enterprise* is analogous to the exhaust stack on the side of each inboard engine on a *B-17*, which directs hot engine exhaust to the turbo-supercharger. The three curved plates under the chin of each nacelle are reminiscent of the bomber’s cowl flaps.

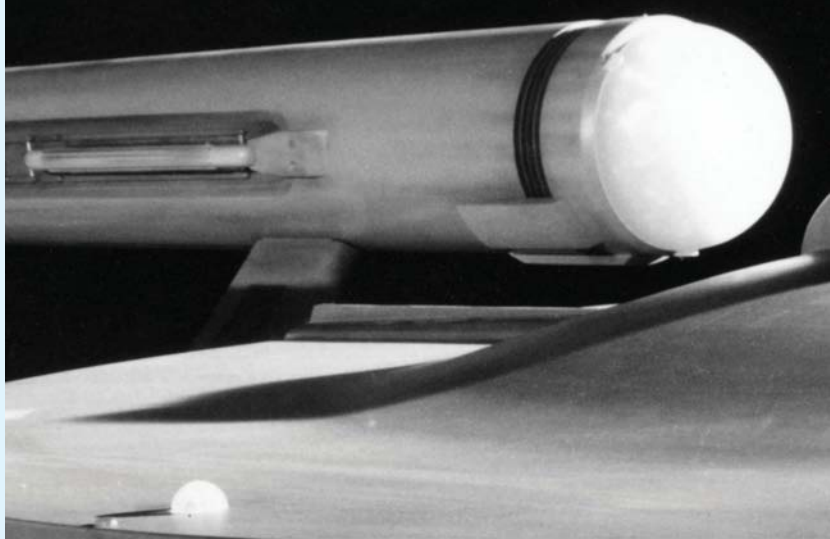
Professional model builder, Richard C. Datin, Jr, was selected to fabricate the one-quarter scale proof of concept model. Prior to this, Datin had constructed models for a number of TV shows, commercials, and movies, and his credits included such diverse subjects as spaceship models for the TV series *Men Into Space* and miniatures for *Jolly Green Giant* TV commercials. Datin’s arm even stood in for the *Green Giant*’s once – in a close-up shot in which the *Giant* picked up a can of vegetables. After *Star Trek*, Datin continued as a professional model-maker for various businesses and the entertainment industry.

From November 4-15, 1964, Datin built the quarter-scale, proof-of-concept model of the *Enterprise* in his garage workshop at 4146 Klump Ave, in North Hollywood, near Studio City, California. The model was made primarily from fine-grained sugar pine, plus some acrylic domes and brass sheet, and cost an estimated \$600.

Datin showed the 3-footer to Gene Roddenberry in November 1964. Roddenberry reviewed the model and requested a few changes, and the final model was delivered to Roddenberry in mid-December. Once the design of the *Enterprise* was finalised, Datin was able to proceed with the construction of the 11-foot filming miniature. In the meantime, the 3-foot model, which was originally intended as a prototype, was pressed into service as a filming miniature for the series’ pilot episode because the 11-footer wouldn’t be ready in time. Afterwards, the 3-footer was occasionally used in publicity photos and made a few additional appearances in the series before it mysteriously vanished.

### The big *Enterprise* model takes shape – the creation of the rollout version

Building an 11-foot spaceship model was too big a job for Richard Datin alone. He already had his hands full building models for the *Petticoat Junction* TV show, including the ‘*Hooterville Cannonball*’ steam engine, the *Shady Rest Hotel* and several other buildings. Consequently, in early



Top-centre: note the similarities between the inboard nacelle of a *B-17* bomber and the port nacelle of the *Enterprise*. A case of art imitating life? Above: the 11-foot model suspended by wires in front of a black backing. Items of interest: the glossy blue finish on the dorsal, the gold-coloured concentric cylinders behind the large, copper-coloured deflector dish, the wooden red nacelle dome, and the transparent, unlit lower saucer dome. At this point, the two groupings of 3 ‘lights’ each on the underside of the saucer are simply open holes in the model.





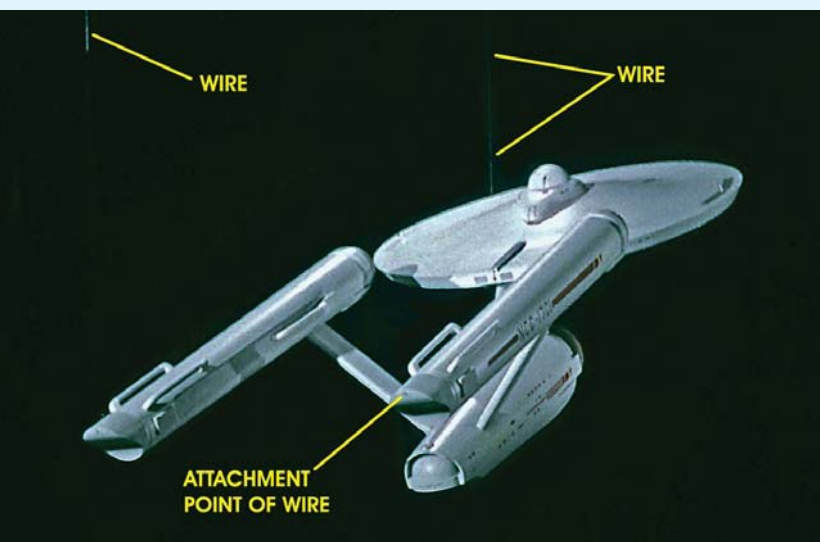
Top: one of the original wooden nacelle domes reunited with a nacelle in April 2016, 50 years after it was removed. Seams on the dome show where blocks of wood were glued together before the dome was lathed. Note the flat front end of the dome and the stem from the sawed-off spire. *Photo by the author.*

Below: this photo shows the 11-foot model midway between the 1st and 2nd Pilot versions. The model is still suspended from barely visible wires (attached to the nacelle endcaps and the centre of the impulse deck), as the 1st Pilot version was, but the 2nd Pilot version's pair of black arcs has been painted on the upper saucer. Note the lack of detail on the rear ends of the nacelle endcaps.

December, 1964, he subcontracted the larger *Enterprise* model's construction to the *Production Models Shop*, located at 104 East Providencia Avenue in Burbank. Volmer Jensen, owner of the business, and his employees, Vern Sion and Jensen's son-in-law, Melvin Keys, used the plans

for the 3-footer, plus the 3-foot model itself, when it wasn't needed for filming, as references to build the 11-footer. Jensen acted more as a supervisor/instructor, while Sion and Keys built the large model from wood, plastic, and rolled sheet metal. All three were closely supervised by Datin. Mel Keys recalls that Jensen was very secretive about letting people in the workshop while completing a project and says that they would put curtains up when someone came in to look at work in progress.

The spindly model of the futuristic starship was supposed to look like a creature of the zero-gravity environment of deep space, but since the model had to withstand the rigours of being filmed in overheated studios on Planet Earth, it was sturdily built, using decidedly conventional means of construction. Even though the model was well-



Right: the setup for a state-of-the-art special effects sequence in the mid-1960s. The 2nd Pilot model remains motionless while the camera dolly moves toward it on tracks. The *Kodak 5251* film stock had an ASA of only 50, so an intense amount of lighting was required for the proper exposure.

made, it was simply a prop for a potential TV show, and the prop was designed to last for only a handful of years. Presumably nobody, including Gene Roddenberry, ever imagined that every square inch of the model would be thoroughly scrutinized for the next half-century and beyond.

Getting *Star Trek* off the ground was an extremely expensive proposition, so Gene Roddenberry had to take some shortcuts in the construction of the big *Enterprise* model. The futuristic interior and exterior sets, as well as all props and furnishings, had to be built from scratch, instead of relying on existing sets and props from previous productions. The limited money in his budget had to be stretched as far as possible, so *Star Trek's* real Prime Directive was 'If something won't show on camera, then don't waste money by building or painting it'. In other words, spend money on the things that the audience will see. The big model was designed to be filmed from the right side only, and its left side was left largely unfinished, except for red banners painted on the port nacelle and secondary hull. To save additional money, Roddenberry also decided to forgo internal lighting on the model and to film the model suspended from wires in front of a black backdrop, instead of relying on expensive and time-consuming chroma key photography. Both decisions were soon reversed.

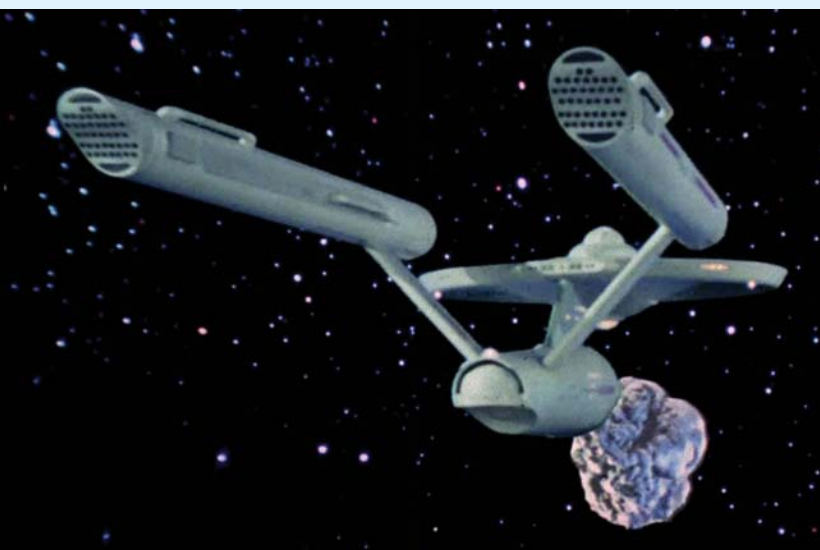
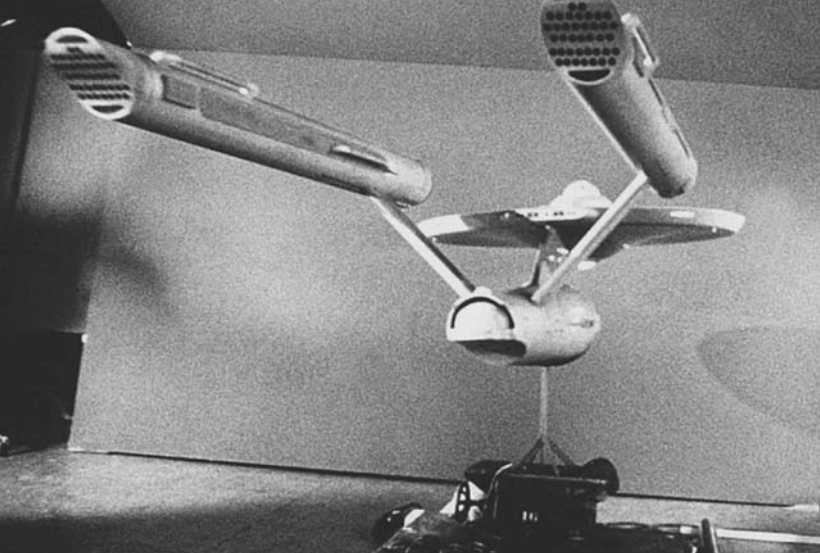
The warp nacelles on the 11-footer were made from rolled sheet metal, bent by a sheet metal shop by roll-forming. The rolled metal was wrapped around some wooden ribs, and both ends were secured to wooden plugs. Cost-cutting was on full display in the way that the nacelles were detailed. The detailing on the aft ends of the ribbed endcaps, which was shown on the blueprints, and



Centre right: even poor-quality photos can provide important information about the history of the *Enterprise*. This extremely adjusted photo is not the result of a flopped negative and actually shows the left side of the self-illuminated 2nd Pilot model (note the wires taped to the side). We can see red banners painted on the non-camera sides of the secondary hull and port nacelle, as well as the very dark grey faux recess on the starboard nacelle.

Above right: in order to avoid a large amount of repainting, Richard Datin simply filled the three gray outlines on the 1st Pilot saucer with black paint during its conversion into the 2nd Pilot version. Also of note is the lighted 'windshield' on the bridge, the faux nacelle recess, and the subtle weathering, which was originally applied to the 1st Pilot version in a radial pattern for *The Cage*.





Above: comparison between a behind-the-scenes photo of the 11-foot model in the studio and how the model appears in the finished spfx shot. Notice the array of simulated black exhaust ports on the endcaps of the 2nd Pilot model.

which had been added to the 3-foot model, was left off the 11-footer, probably to save time and/or money. In another money-saving move, only two of the three curved, rectangular plates under the front end of each nacelle were installed. Rectangular side vents were installed near the aft end of each nacelle – but only on the starboard side, which faced the camera. Similarly, the port nacelle had a recess on its inboard side, but this feature was eliminated on the starboard nacelle because it would be barely, if at all, visible to the camera.

In case the inboard side of the starboard nacelle were ever to show up on film, the trench and vent were simulated with a trompe l'oeil paint scheme. The faux recess was painted on paper, as evidenced by the wrinkled upper and lower edges seen in our reference photos, and then it was wallpapered to

the side of the nacelle. The loop portion of the control reactor was the only 3D part of the design. The simulated rectangular rear vent seems to have been painted directly onto the nacelle. Photos show the faux recess and vent on the 2nd Pilot model, but we weren't able to establish exactly when they were added to the starboard nacelle.

Each nacelle dome was made from four pieces of hardwood glued together in three separate layers, and then turned on a lathe. The base colouring was 'burgundy-ish', as described by Datin, and Matt Jefferies sprayed brownish-black *Pelikan-brand* ink on the domes in an uneven pattern, perhaps to simulate swirling energy within the domes. Overall, the domes were a warm, reddish-brown colour and had a semi-glossy finish, as shown by the reflections of studio lighting in some shots of the domes. Datin lathed three identical wooden spires – two for the nacelle domes, and one for the deflector dish. To differentiate the spires on the nacelle domes, Datin sanded the edges of the doughnut-shaped section near the conical base of two spires into a diamond shape. Lastly, Datin painted the spires with lacquer he described as 'gold, almost copper in tone'.

The secondary hull was built like a wooden barrel: wooden staves were formed over a couple of internal bulkheads, and then the entire structure was lathed, probably at another shop, to make it perfectly round. The scalloped area under the fantail was nailed into place, but the rest of the secondary hull was held together solely with glue – a decision that could have had potentially disastrous consequences a half-century later.

The front end of the secondary hull, which I refer to as the 'deflector assembly', is removable. Three concentric plastic cylinders, with wall thicknesses of 1/8", composed the inner part of the assembly, and a shroud shaped like a truncated cone surrounded them. The 10" diameter deflector dish was heat-formed from acrylic sheet, and was painted a darkish shade of copper. The 3rd wooden spire, which Datin had lathed earlier, was installed as the deflector dish's center spire.

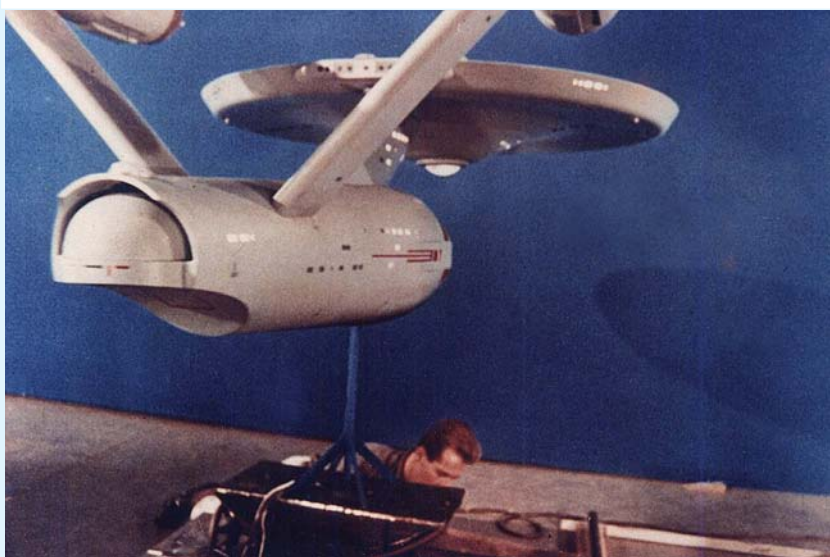
Leonard Bessom, a friend of Jensen's and an archaeologist for the LA County Museum, helped to create the plaster patterns for the upper and lower saucer sections by rotating screeds in the shape of the saucer profiles through wet plaster. 1/8" *Royalite* plastic sheet was then vacu-formed over the plaster patterns at a different shop

because *PMS* did not have sufficiently large vacuum-forming equipment. The saucer projected far in front of the ship, and was held in place by only two lag screws, so it had to be especially well-built to prevent it from sagging or collapsing under its own weight. A wooden box beam ran down the saucer's centre line and supported most of the weight, and radial plywood ribs supported an O-shaped piece of plywood. The saucer's plastic skin was attached to the wood framing and was reinforced from behind with fibreglass.

A *Fuller's* paint dealer on Olympic Blvd matched paint chips provided by Jefferies and custom-mixed lacquer paint (with a dulling agent added) for the model. Mel Keys' son, Steven, remembers Jensen saying that the model was painted in a shade of automotive gray. No decals were used, and all the main hull markings and lettering were painted on the model. The upper saucer had no simulated navigation lights or markings, other than the ship's name and registry number, plus a couple rectangular hatches on the teardrop-shaped B/C deck section. Mel Keys doesn't believe that the belly markings were painted on the model at the shop. Photos reveal that the five multi-coloured landing lights had not yet been added to the ship's stern, either.

Gene Roddenberry had determined that the model would not require internal lighting, so all simulated windows were painted on the model with glossy, dark grey paint. The saucer pylon (popularly known among fans as the 'dorsal') was a shiny blue colour, which was achieved by spraying a blue-tinted, glossy shellac (possibly pearlescent) over the grey hull paint. The bolt cover on the upper saucer was treated the same way. The shiny blue colouration would have caused problems with chroma key photography, but this was not an issue because Roddenberry had decided to film the model hanging from wires in front of a black backdrop, rather than in front of a blue screen.

Construction of the 11-foot model was completed shortly after Christmas of 1964, and on December 29, the model was moved outside to the street in front of the shop. Volmer Jensen and Richard Datin took turns photographing the model and construction crew. The *Enterprise* was not the *Production Models Shop's* last experience with spaceship models, as several years later, they would build the flying saucer miniature for *The Invaders* TV series. As a side note, the motel that



Above: a pair of before and after photos of the 2nd Pilot *Enterprise* shows the 11-foot model and blue-painted stand attached to the *Technicolor* camera tripod head in the studio. Additional blue sheets will block out the studio floor and technician before the camera rolls. An optical printer will create masks and counter-masks that will eliminate anything that's blue and replace it with the asteroid background. These two photos give us a good look at the four pairs of simulated exhaust ports on the impulse deck of the 2nd Pilot model. Note the amount of degradation to the quality of the image of the *Enterprise* during the process.

is visible in the background of the rollout photos is still in existence, as of 2016, but the *Production Models Shop* has been torn down to make room for new development.

### 1st Pilot Version

After the December 29 photo session, Richard Datin disassembled the 11-foot *Enterprise* model,



placed it in the back of his 1954 *Dodge* station wagon, and delivered it to the *Howard Anderson Company* for filming. Sometime in the brief window between the delivery of the model and the date it was first filmed, Datin added simulated navigation lights, various technical markings, and subtle weathering (arranged in a radial pattern) to the upper saucer and bridge because these areas would be seen in close-up in the episode's opening shot. Belly markings and the stern landing lights were also added to the model by this time.

Before proceeding any further, I should clear up some confusion regarding the construction of the two *Enterprise* models. Since Matt Jefferies' name is so closely linked to the designing of the *Enterprise*, many fans have assumed that Jefferies put a great deal of thought into the inner workings of a starship and assigned a function to each and every feature of the surface of the ship. The reality is rather more prosaic. Jefferies had his hands full with designing the show's interior and planet sets, so someone else – we don't know who – decided to add various hatches and other details to both the 3-foot and 11-foot models. As Jefferies put it years later, they 'put something on for the sake of putting something on'. We now return to our story...

Since the 11-foot model wouldn't be filmed from the rear for the pilot episode, surface detail that was shown on the blueprints (and which was present on the 3-foot model) was left off the ends of the nacelle endcaps. The large, heavy model was suspended, as far as we can tell, from three wires – one coming out of the small hole in the back of the impulse engine, and the other two attached to the upper rear faces of the nacelle endcaps.

Because of the late delivery date, only one shot of the 11-foot model appears in the pilot episode. Ironically, the last scene filmed was the first scene in the pilot episode. The scene in question is the technically ambitious zoom-in shot to the bridge at the beginning of the episode, and it was filmed sometime in January 1965. After *The Cage* footage was filmed, additional test footage of the model was shot from various camera angles.

### Let there be lights – the 2nd pilot version

As most *Star Trek* fans know, the first pilot was rejected by *NBC* for being too slow and cerebral; however, the network had enough confidence in the concept to fund a second, more action-packed pilot. When it came time to shoot the second Pilot

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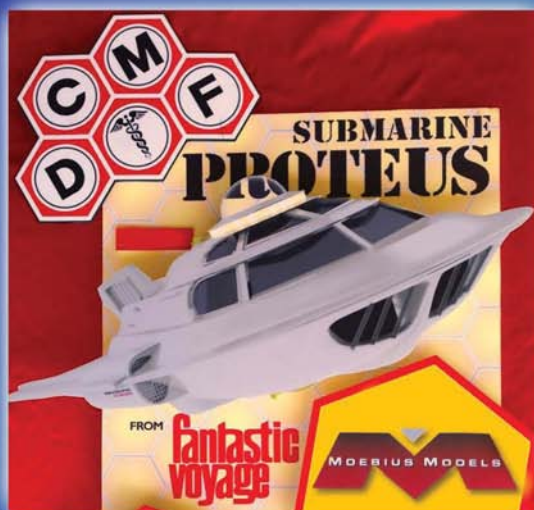
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Top: this view of the 'left' side of the 2nd Pilot ship in *Mirror, Mirror* is brought to you, courtesy of a flopped negative. The light blue dorsal and the gold-coloured cylinders behind the deflector dish are clearly visible. The registry numbers on the nacelle were NOT created by mirror-image decals. If you look carefully, you can see that the studio technicians simply painted a mirrored registry number onto a piece of paper and wallpapered it over the original painted-on registry. The simulated left side of the ship was also seen in *Dagger of the Mind*.

episode, Roddenberry met at Howard Anderson's studio with Howard Anderson (or his son), the cameraman, and possibly others and discussed how to liven up the *Enterprise* model at a minimal cost. As a result of this meeting, Roddenberry reversed his earlier decision and decided to have internal lighting installed in the model – much to Richard Datin's chagrin, since it was no longer feasible to run the wiring inside the model. Another change: instead of hanging from wires, the model would now be filmed in front of a blue chroma key screen, mounted on a metal stand that was painted with chroma key blue paint. Both the stand and model would be securely mounted onto a tripod head that had originally been used to support bulky, heavy *Technicolor* cameras. The tripod head would allow the model to 'bank' while being filmed.

The 11-footer was moved into Datin's garage workshop, whose walls were lined with all kinds of railroad signs, reflecting Datin's fascination with trains and railroads. From August 27 through September 8, 1965, Datin made a number of changes to the model. He drilled a mounting hole in the model's bottom for the new stand. He also cut holes in the saucer and secondary hull for

lighted windows and portholes – and he cut them as neatly as possible so he wouldn't have to do a complete repaint of 'the monster'. The clear windows were made from rectangular and round *Plexiglas* rods, but no clear windows were installed in the centre one-third of the secondary hull because structural bulkheads made that area inaccessible for lighting. Out of necessity, wiring for the lights was routed out the left side of the model.

A total of four light bulbs that blinked in unison were added to the model – one at the bow, two on the underside of the saucer, and one inside the bubble over the hangar bay doors. Bulbs behind the side windows in the hangar bay area and behind two windows on the 'neck' were on another circuit, and they both blinked in unison.

An illuminated 'windshield' was added to the bridge, and three rectangular openings, covered by frosted *Plexiglas* sheets, were cut into the upper saucer to provide access to the interior light bulbs that illuminated the side windows. Because of the extremely tight budget, the side windows on the left rear quadrant of the saucer weren't illuminated, and since there was no need for an





access panel on the upper saucer, the lighted panel was simulated with gloss white paint. Simulated (and not illuminated) navigation lights were added to the upper saucer. The upper and lower acrylic saucer domes, which had previously been transparent, were sandblasted to evenly distribute the internal lights.

The theme of minimally repainting the model carried over into the markings on the upper saucer. The 1st Pilot saucer had medium grey outlines of two arcs on the port and starboard sides of the upper saucer, plus a fat 'T' shape at the bow. During the conversion into the 2nd Pilot version, Datin simply filled in the three shapes and painted them flat black.

The propulsion system was altered, too. The pair of recessed, rectangular exhaust vents on the impulse deck was painted medium grey, and four pairs of simulated round exhaust ports were added to the face of the impulse deck, either with paint, decals, or black tape. An array of 39 black simulated exhaust ports was added to the rear of each nacelle, using the same method.

Five 1/16" square wooden rods, spaced at 40-degrees apart, were supposed to be added to the

centre portions of each of the four intercoolers and to the control reactors, but this plan fell victim to the extreme 'If something won't show on camera...' philosophy. No ribs at all were added to the control reactor in the simulated starboard nacelle trench. The intercooler on the starboard side of each nacelle received the full complement of five ribs apiece, but the intercoolers on the port side of each nacelle fared less well. The port intercooler on the starboard nacelle got four of the five ribs, while the port intercooler on the port nacelle only got three. The ends of the off-white intercoolers and control reactors were masked off, and the ribbed areas were painted either hull grey or medium grey. None of our colour reference photos show the intercoolers well enough to definitively say which of the two very similar shades of grey were used on the ribbed centres, but the 2016 restoration team went with hull grey.

A glossy blue 'neck' would not be compatible with blue screen photography, so after holes for clear windows had been chopped into the saucer pylon, it was sprayed with a dulling agent, and the net result was that it took on the appearance of being painted with a flat, powder-blue paint. A frame from an unused special effects shot, filmed while looking directly down on the model from above, reveals that the bolt cover was repainted the same colour as the 'neck'.

## Epilogue

The second pilot episode, *Where No Man Has Gone Before*, was sufficiently action-packed, so the executives at NBC greenlighted the series to begin production. The show had a new leading man, and the new captain would need an upgraded ship. The next installment of the story will detail the 11-footer's career from its conversion into the so-called 'Production version' through the end of the series, an encore performance at Golden West College, its retirement to the Smithsonian in 1974, and the pre-2016 restoration efforts.

Kerr out.

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SOCIAL MEDIA WITHOUT A DOUBT HAS BROUGHT THE WORLD TOGETHER, bringing people closer like never before. I've had the opportunity to meet some wonderful and talented people through social media networks, one of those people being the very talented sculptor Jason 'Spyda' Adams. Haven't heard of or know who Jason *Spyda* Adams is? Son of famed comic book artist Neil Adams, Jason went in a different direction with art and paved his own way by becoming a sculptor. While Jason is also a very established pencil and ink artist in his own right, his real talents lie in his sculptures and garage kit creations. His artist profile on his website further describes who he is very well:

*Jason Spyda Adams is a self-taught sculptor from NYC. His work has spanned from fine art to special effects make-up, toy sculpture, and just about any field where 3D modelling applies. His anatomy studies and lessons have been acclaimed by the best in the business. Recently, his own book Spyda Creations, A Study of Sculptural Method was published, offering a way of studying sculpting that was never offered in schools. While he continues to work in the licensed sculpture industry, his real passion is the time he spends on his own creations. With these sculptures he can apply his strongest theories of sculpture. Jason shares his passion on sculpting 'Strong anatomy and to make a piece that holds its composition from any angle you look at. In fact, a sculpture may reveal*

# Let the games begin!

Jason C. Gares takes up the Tournament Challenge





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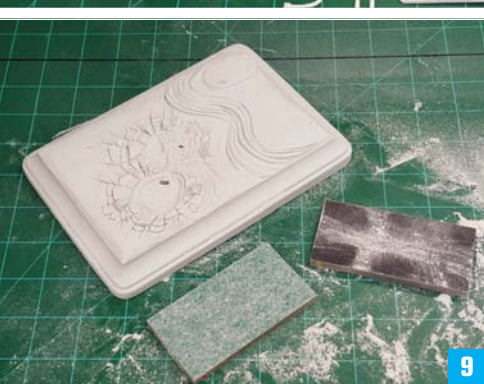
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more of the story as you turn it around, or walk around it. Anything else may just be done as a drawing or painting where you are forced to view it from one angle. A sculpture has the greatest ability to draw you in, and tell you a story and to make you feel movement and action. The pleasure of doing the work comes from delivering these things, not in just making a statue that looks like something recognisable.'

Getting back to social media, Jason and I became friends through Facebook and decided

that I should do a build and paint-up of his new kit Tournament Challenge. Here's some background on the model kit from his website:

Tournament Challenge is the third addition to the Tournament Series. What started off as a singular conceptual sculpture has grown into a storyline of its own and will be part of a series of characters in a comic series by Spyda Creations. These dino-riding babes will have a story to go with them. Not that they





need a story. Each is designed with a composition of its own and as a model kit; there are lots of details and room for your own imagination while painting them up. Tournament Challenge is in the same scale as the other Tournament kits – 1/10 scale with 13 resin parts and 2 lengths of chain. A brass rod is cast inside the spear pole for assured sturdiness. (Photos 1-2.)

After Jason and I talked for a while on Facebook Instant Messenger he decided to send me a copy of his Tournament Challenge kit as he wanted to see what I could do with it. I was up for the challenge and had an idea of what I wanted to do. I had a very unconventional intent as to how I wanted to approach this subject. ...So sit back, grab your favourite beverage and cozy up to this tale of how

thinking outside the box and having fun with model kit building and painting can get you results you never thought were possible.

I waited for about a week to receive the kit and when it arrived I wasn't disappointed. It came with four-colour artwork on the outside of the box and was very well packed. The large pieces were protected by bubble wrap, while the smaller parts were in small zip-lock plastic bags. It also came with an instruction sheet (sometimes omitted from garage kits) and a signed card by Jason that can also be signed by the artist who builds and paints the model kit. I happened to notice that the card was just the right size to fit on the underside of the base, but more on that later, as it's time to get building. (Photos 3-4.)





The entire model kit is cast in a light grey resin and is very detailed. As usual with almost any garage kit, there are a few air bubbles. Two lengths of small chain are also included that will be glued to the reigns – a very nice touch. So, first things first, I wash all the parts in warm soapy water and let air dry overnight. The next day I work on getting rid of seam lines and extra flash that are on several pieces, some of them are in very hard to reach areas so I use a combination of my motor tool, sandpaper, emery boards and files to get rid of them. This is sort of a long and tedious process that has to be done carefully, especially in very detailed areas, such as over the creature's textured skin and underneath the warrior's arms and around her clothes. The base also had a couple of issues, mostly with flash on the bottom edges, along with making sure the bottom is flat. To smooth the bottom of the base I use an electric sander as it's quick and easy. Remember: work smarter, not harder. (Photos 5-9.)

I start with work on the beast. He's very detailed, so extra care needs to be taken when sanding and filing. I have to make sure I don't sand any area flat, unless it calls for it. I also need to dig into areas to redefine them if the seam line goes into them, achieving this with either a pointed file or a hobby blade. I also notice there looks to be some areas where the rubber mould has torn, so those areas need to be filled in and resculpted to blend in. I test fit the lower right leg over the upper leg peg and find it doesn't seat properly, so I sand the peg down and grind out some resin to make it

fit. I use superglue to attach the bottom leg to the top portion. Next, I glue the saddle grip to the rest of the saddle and spray some kicker on it to speed up the hardening time. Prepping the beast is now done. (Photos 10-17.)

Next up is prepping the lovely (and dangerous) lady 'Challenger'. I sand a little bit more in areas I feel I've either missed or which I think need more detail engraving. Once all the parts are finished to my liking, I prep areas and glue them together using superglue and kicker. This includes her right hand holding a sword, shield for her left arm and flowing hair to be connected to the back of her head. The *Challenger* is finished. (Photos 18-23.)

So now I'm at a crossroads... for painting purposes do I keep the *Challenger* separate from the beast or glue her into the saddle? There will be pros and cons to both, so I really have to figure out what will be the correct choice for me. I decide it will most likely be easier to paint her while in the saddle, so I glue her in. I make this decision because I think it will be easier to hold the beast so I can hopefully get into hard to reach areas on her easier with my airbrush. Also, it's way easier and smarter to glue resin to resin. If I had paint on the rider, I would have to sand some of it off to glue her in – *not fun*. Also, by gluing her in now I can fill seams and sand them more easily, not having to worry about messing up the paint job. (Photos 24-26.)

I move on to prepping the base so that the beast and rider can be placed on it. But first,



because I think it's not strong enough, I break off the supplied 'key' tab that goes into the base and sand the area smooth. Now that the tab is off, I have to make my own 'key' to make sure both beast and rider will be secured to the base. I use a drill bit that's slightly larger than the circumference of a wire coat hanger and drill holes through the base where both feet are planted. I hold the beast tightly into the areas where his feet seed into, take a section of wire hanger and slide it into each hole, touching the bottom of its feet – this will give me a 'guesstimate' on how long I want the wire to be. I cut two lengths of wire with my motor tool and slide each piece of wire back through the holes to check placement. I add a generous amount of black acrylic paint to the top of the wires and gently place the feet of the beast on them. The

black paint on the bottom of the feet shows me where I need to drill holes so I can glue the wire into them. Once drilled, I double check the placement of both wires and when I'm happy as to where I think they should be, I glue the wires into both feet. I place the beast back on the base, sliding both wires through the holes past the bottom of the base. I purposely cut extra lengths of both wires, as it's always good to have more than less. In my opinion, it's easier to take away than add to. The extra amount of wire shows through the bottom of each hole. I paint each wire up to the bottom of the base so I know where to cut them. I use the cutting wheel on my motor tool and cut the excess away and a little extra for good measure. Lastly, I test fit the placement of the wire and *voilà*, both wires stop just short of each hole. But it's not yet time to





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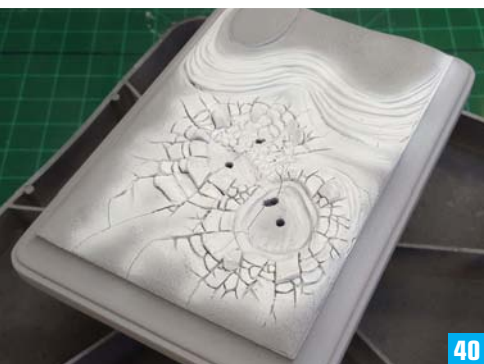
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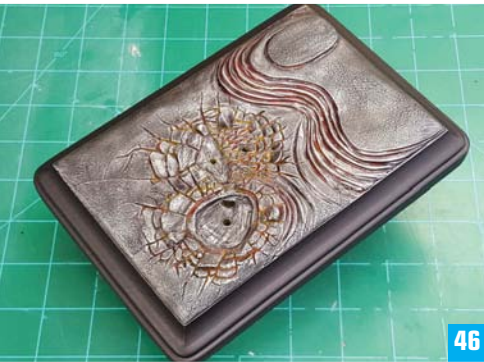
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glue the beast and rider into place as I'm at a point that painting needs to start. (Photos 27-36.)

To make sure both rider and beast are set in place while painting, I bring out my trusty paint board and drill two holes through it so the wires can seed into them, giving me a sturdy platform to work on. I place the board on a homemade 'lazy Susan' I built and proceed to spray on *Badger Airbrush Stynylrez Gray Primer* all over. I'm not yet ready to paint them any further, so I put them off to the side.

I turn my attention to the base, which represents a sandy terrain with a muddy, cracked Earth look. But, as you might imagine, I have different plans for the base. I prime it with the same primer used on rider and beast, then airbrush *Wicked Colors Wicked White* over the primer in areas I wish to highlight and glow. ...Glow? But why? you may ask. Because, instead of a barren wasteland of sand, I'm going to recreate lava flow that's cooling as it's moving. In between the cracks will be hot, glowing lava, as well as between the layers of sand.









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To achieve the lava glow I use *ComArt Opaque Dinitrile Orange* and *Opaque Deep Yellow* in between the cracks and layers of lava flow. I then highlight areas with *ComArt Transparent Bright Red*. Next, I drybrush and airbrush *Ceramcoat Black* all over the base to give the look of black charcoal. To achieve the look of lava that's cooled into black glass, I drybrush *AK Interactive Xtreme Metal Dark Aluminum* all over the black paint. The look I wanted has been achieved – the base is now complete. (Photos 37-46.)

Moving on to the *Challenger* and the beast, I decide to begin painting

the beast first. This is pretty much a run of the mill paint job using several different types of paint brands and green colours to achieve the look I want. Using an airbrush for the beast's skin colours, and brushing on a transparent black wash over that, more details pop out. I continue by airbrushing *ComArt Black* on areas I plan to have pre-shaded or metallic. I then clean up all the black wash with both a brush and cotton swab dipped in plain water. Lastly, I drybrush different green hues randomly all over the beast's body and head to give the appearance of varied skin tone and texture. (Photos 47-54.)

I continue the painting process by airbrushing copper onto the beast's helmet and weathering it slightly. Next up is to give the bags and saddle a base coat of light brown and the teeth, tusks, belly and nails a couple light coats of ivory. *ComArt Bone Flesh* and *Opaque Raw Umber* are lightly airbrushed over each other on the beast's nails, teeth and tusks to achieve a worn, dirty look. Black is also lightly airbrushed on the bottom of its feet and around the edges of its toenails so that it looks like it's been running on the cooled lava glass. I colour in the eyes with ivory and paint in the pupils. All the leather receives several light layers of black





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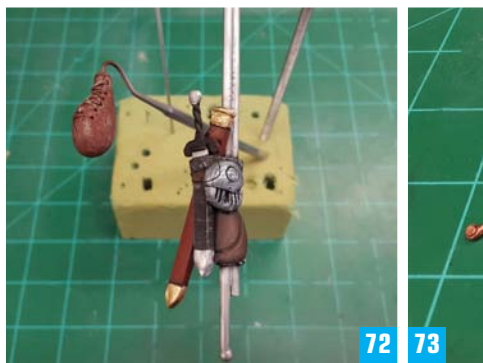
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acrylic dry brushed over the base coat of light brown to make it look more worn and used. The beast's belly gets a light yellow colour added along with a black wash to bring out more detail. I mask off both shields using painters tape, airbrush on an *AK Interactive Xtreme Metal Black* base and follow that up with *Xtreme Metal Duraluminium*. To make the shields look worn, I add a couple washes of *AK Interactive Brown Enamel Truck Wash* and wipe away. *ComArt Dark Rust* is lightly airbrushed on to complete the desired effect. (Photos 55-65.)

I move to the *Challenger* rider and apply several thin base coats of *Xtreme Metal Aluminium* all over areas where there naturally would be skin, as I'm going for more of a robotic look than humanoid. Then I continue with what

she has on for clothing with dry brushing on both *Ceramcoat Ivory* and *Autumn Brown*, and then add *Ceramcoat Dark Brown* over that. Moving to her hair, I drybrush on a base of *Ivory* and add light purple over that. Getting into more detail painting, her head band gets painted gold as well as the hilt of her sword. Her shield and sword get painted silver with transparent blue highlights. Eyebrows, eyelashes and eyeliner are painted flat black, her lips dark red and her eyes ivory with no pupils. All accessories are primed and are colour-matched with the rest of her gear. Lastly, I airbrush on light coats of *ComArt Transparent Blue* and *Purple* all over her body to make her silver skin look more weathered and robotic in appearance. To finish off this piece I airbrush on light spurts of *ComArt Transparent Black* all over the beast to

dirty him up a little more. I sign the card supplied that was already signed by Jason Spyda Adams and glue it to the underside of the base. ...I'm done! (Photos 66-73.)

From the very beginning I had decided I wanted to paint this piece outside of the norm, taking inspiration from *Heavy Metal Magazine* and other science fiction subjects. (Pics. 171-231) Never be afraid of what others may think of your creations, make yourself happy and enjoy all aspects this hobby has to offer. Be inspired and create something great! Thank you for reading and subscribing. MODEL ON, my friends!

Jason C Gares, owner,  
Video Workbench Productions  
[www.videoworkbench.com](http://www.videoworkbench.com)







# Dieselpunk Destroyer

## Roger Brown scratchbuilds a highly detailed 1/35 sci-fi tank

I ENJOY BUILDING MODEL TANKS, OR *AFVs* AS THEY ARE CORRECTLY KNOWN, AND HAVE BUILT MODELS IN 1/35 AND 1/48 SCALE TOGETHER WITH A FEW IN 1/72. The difference in building AFVs compared with – say – aircraft, cars and ships is that they can be modified, customised, painted and weathered any way you would like within reason... a bit like building sci-fi models!

So, after some research on the internet for images of futuristic tanks, inspiration set in and I began to sketch up a sci-fi tank. The idea was to use the chassis or hull of a WW2 tank as a basis, modify this and then build my own design of turret with advanced weapons.

However, I figured that a vehicle using a WW2 hull with a supercharged diesel engine and a retro-fitted gas turbine engine, topped out with a fabricated turret to house futuristic weapons and armour, would fit in with the 1940s/'50s' *Dieselpunk* genre. So I did a bit more research into *Dieselpunk* and it would appear that I was on the

right lines. I also discovered that *Maschinen Krieger*, or *Ma.K*, is classed as *Dieselpunk* and I am a great fan of their kits.

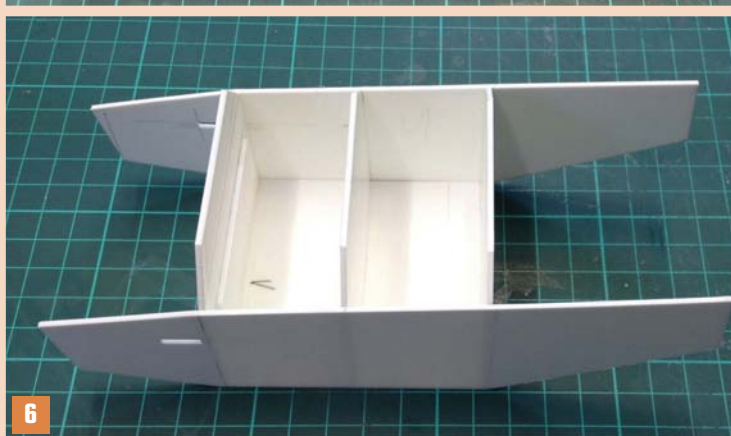
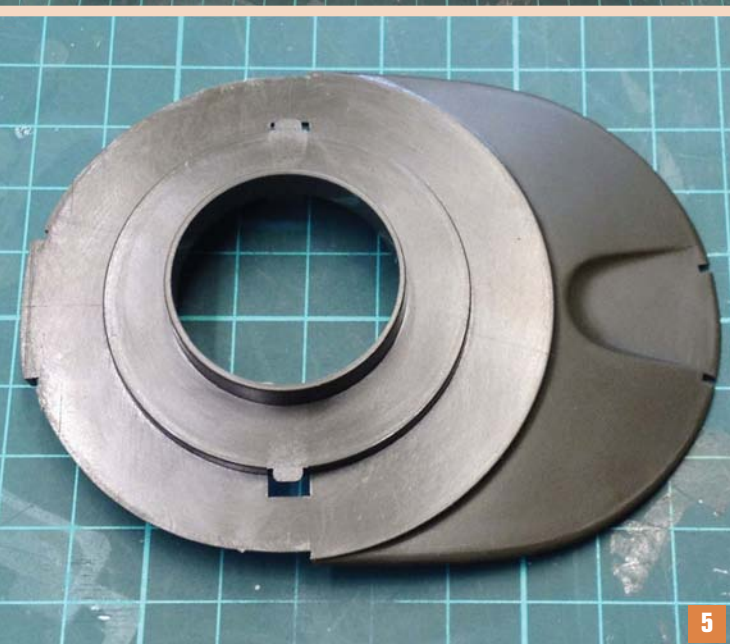
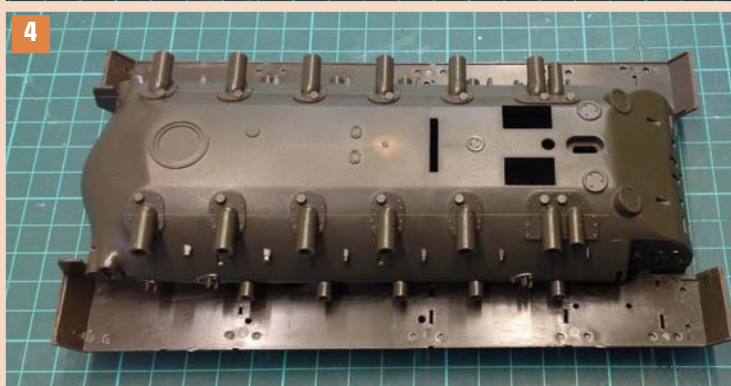
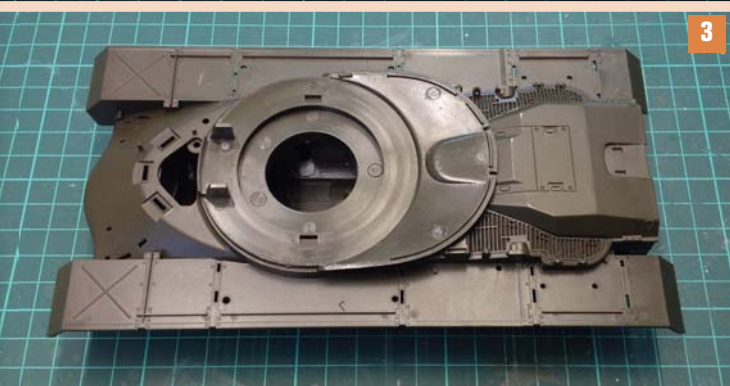
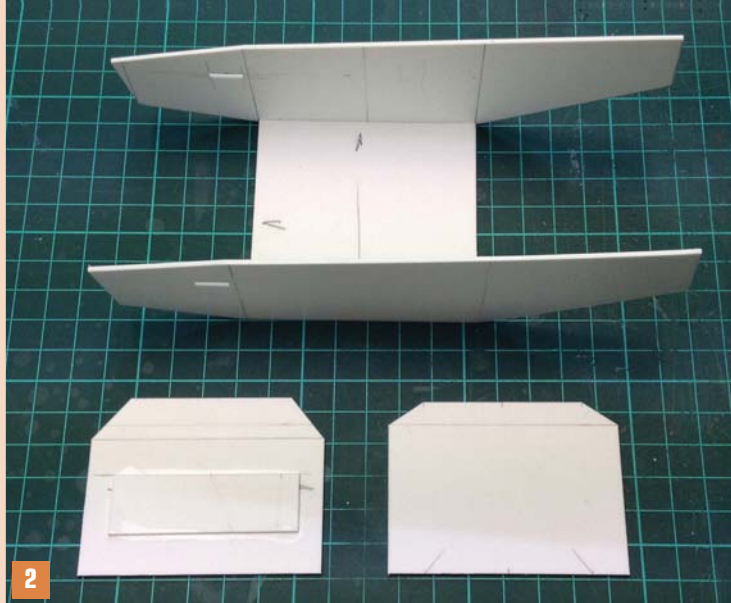
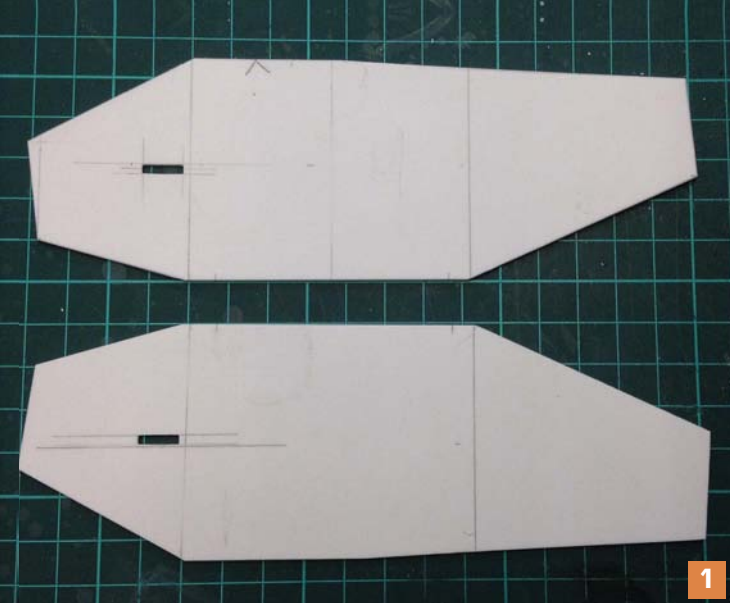
### Design

I decided to use the hull of a *Tamiya* 1/35 M48 *Patton* tank which has been in my collection for many years – an older *Tamiya* kit, but very well moulded with plenty of detail. [3-4.]

The M48 is a post WW2 vehicle first used in 1953 and continuing in service until the 1990s. The hull consists of upper and lower mouldings, both of which would be modified and adapted. The new turret would be the main item which had to be designed and then scratchbuilt and the hull and turret would be 'kit bashed', as well as featuring new scratchbuilt features.

I drew up plans for the new turret which would incorporate the kit turret mounting ring [5] to locate the turret to the hull. I also planned to use the kit cupola and adapt it to the new turret. The

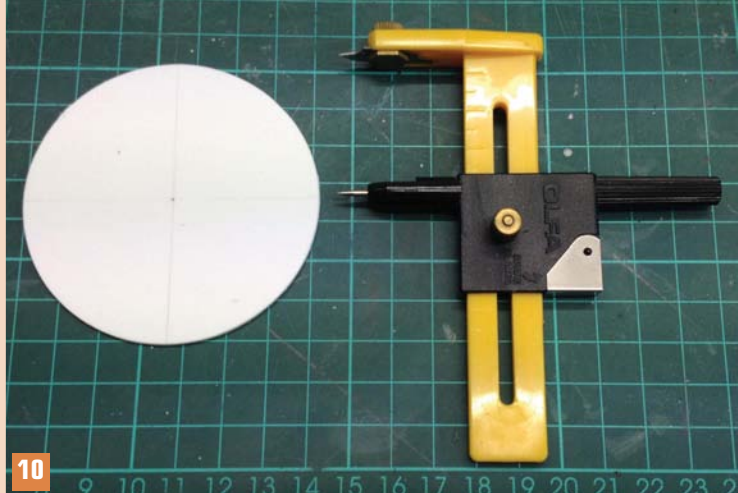




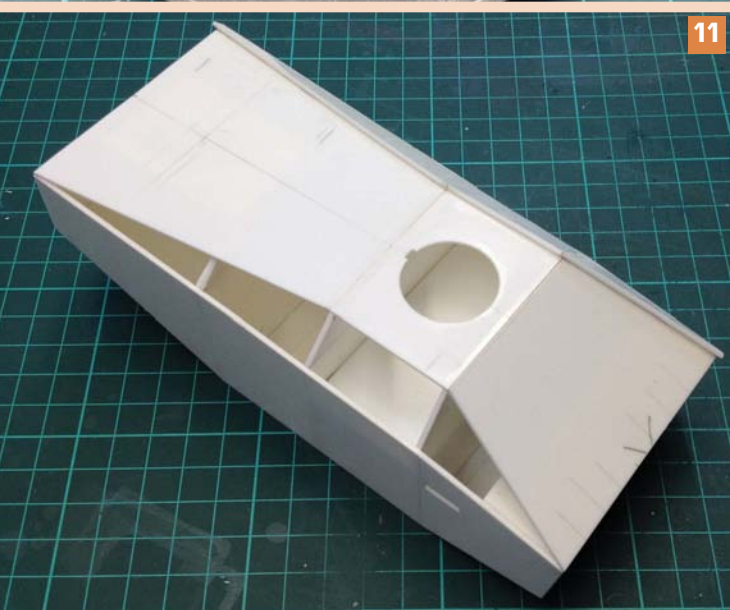




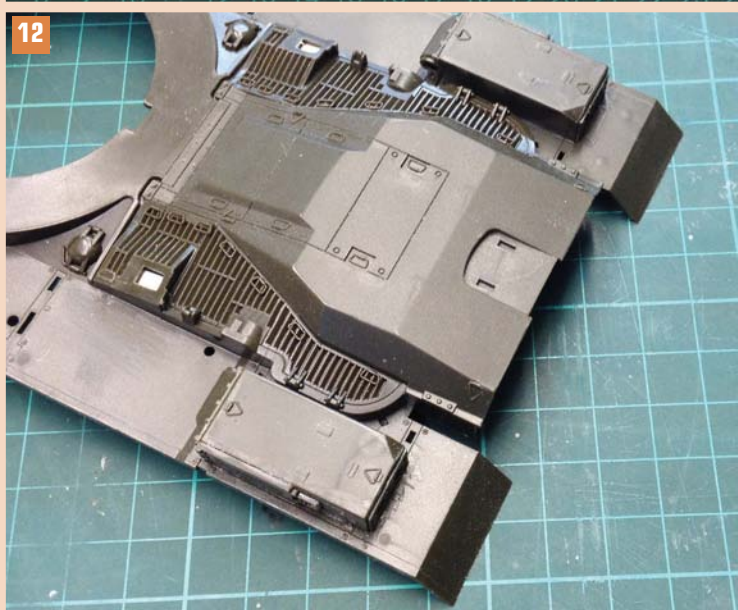
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hull would, of course, use all the kit main wheels, drive sprockets, idler wheels and tracks.

The main weapon was to be a plasma cannon which would mount on the front turret plate together with its internal targeting laser unit. The plasma beam is generated by Tesla coils as these devices were popular in the early half of the 20th Century. Experimental Tesla tanks were developed during WW2 by both sides but with limited success (I made this part up).

For secondary armament a six barrelled *Gating*-type gun [23] fitting on the front cupola would be designed and built, together with a four-barrelled automatic cannon mounted on the rear of the turret. These weapons would be made up using various sizes of aluminium tube supplied by *Albion Alloys*, some kit parts and *plasticard*.

### Turret Construction

The basic overall width of the hull was 72mm,

which matched the diameter of the turret mounting ring. I began by cutting out a 300mm long strip of 1.5mm *plasticard*, 69mm wide, which would give me enough material for the base plate and internal bulkheads. The base plate was cut from this strip to a length of 72mm and would form the base of the turret.

Two side pieces were cut from 1.5mm *plasticard* [1] and rectangular observation slots cut in the front end of each piece (it's far easier to cut and file these slots out before the assembly) and cemented to the base piece. Throughout the initial construction of the turret I used a 25mm thick piece of *MDF* as a building board, together with engineer's squares and blocks to ensure the assembly was flat and square.

Three internal bulkheads [2 & 6] were cut from the 1.5mm strip and cemented in position between the side plates centrally and at each end of the base plate. The two underside plates [7-8] and a rear



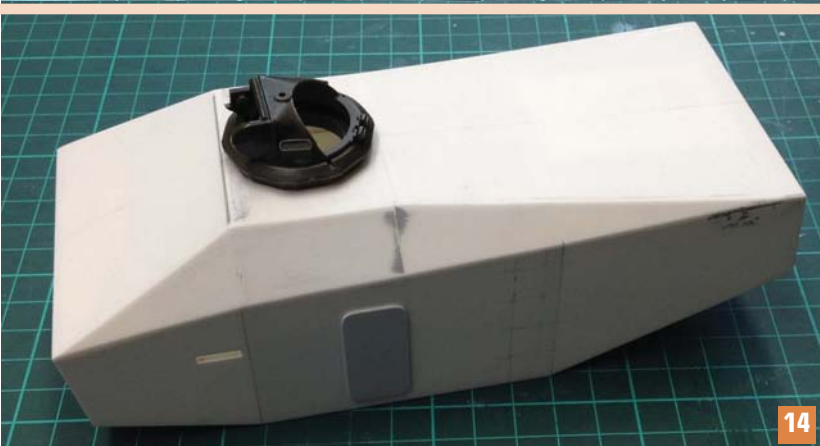


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bulkhead were cut from the remainder of the strip. The plates were cemented between the side plates butting up to the base plate and the rear bulkhead cemented between the ends of the side plates.

A 25mm wide strip was cemented between the side plates at the front to fix the width before the front plate would be added. This would also have two observation slots cut and a central hole to position the plasma weapon.

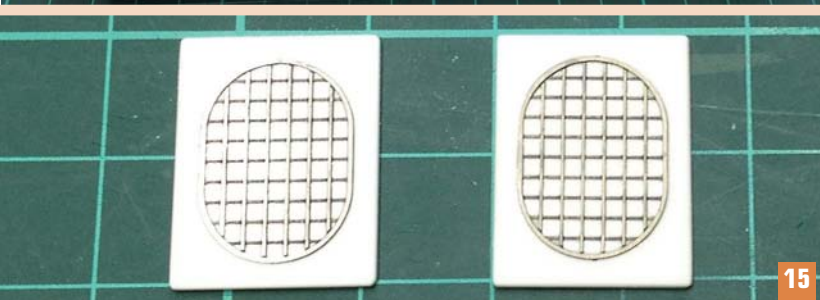
A sloping front plate was cut from 1mm *plasticard* and cemented to the top of the first bulkhead and hull sides.



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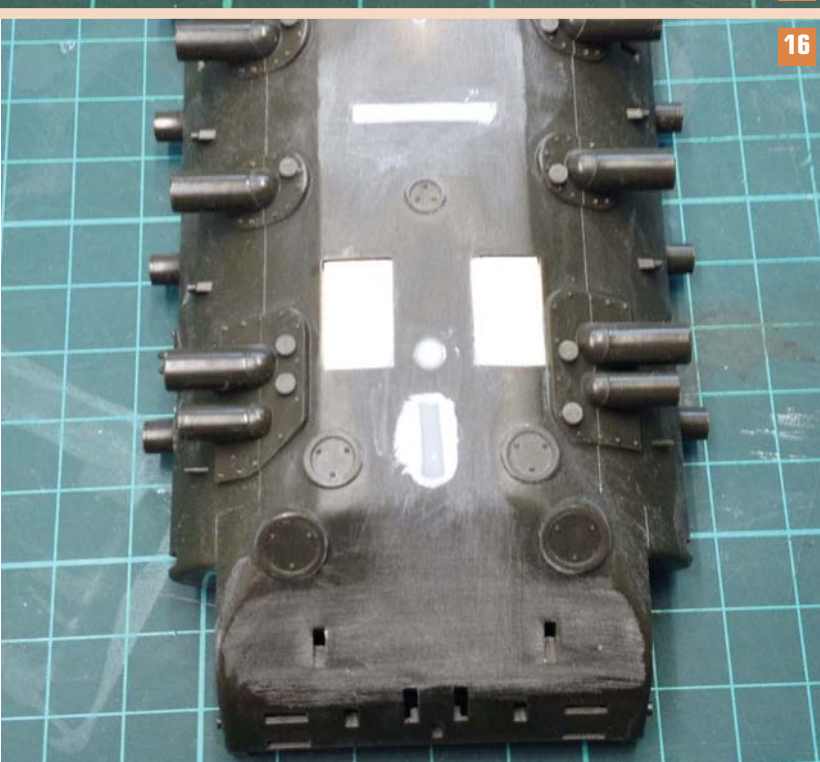
The cupola mounting plate was also cut from 1mm *plasticard* and a 24mm diameter hole cut centrally to match the mounting ring of the kit part (I use my very useful *Olfa P* cutter for all this type of work). [9-10] This plate was then cemented onto the first and second bulkheads, butting up to the front sloping plate. Finally, the rear sloping plate was cut from 1mm *plasticard* and cemented to the second, third and rear bulkheads, butting up to the cupola mounting plate.

All edges were now chamfered so they would accept the angled side plates.



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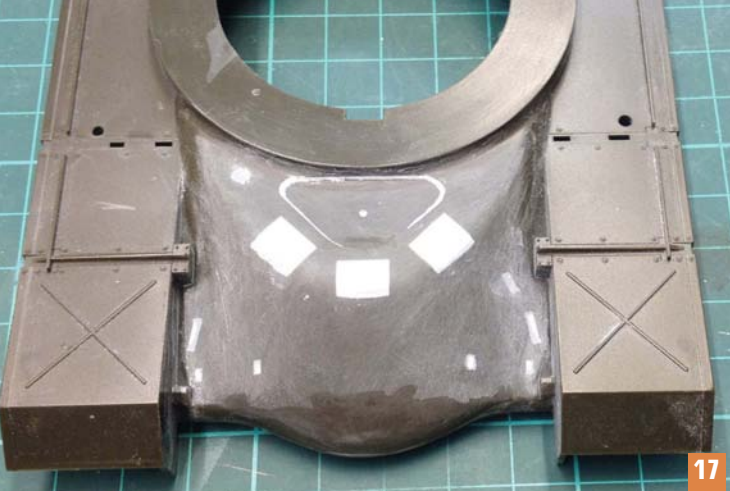
The six side plates were cut slightly oversize from 1mm *plasticard* and, starting at the front, cemented into position onto the hull. When set, all the overhanging *plasticard* was sanded off, leaving me with the basic finished shape of the new turret. [11] I added some *Tamiya* filler to any gaps that showed up after sanding.



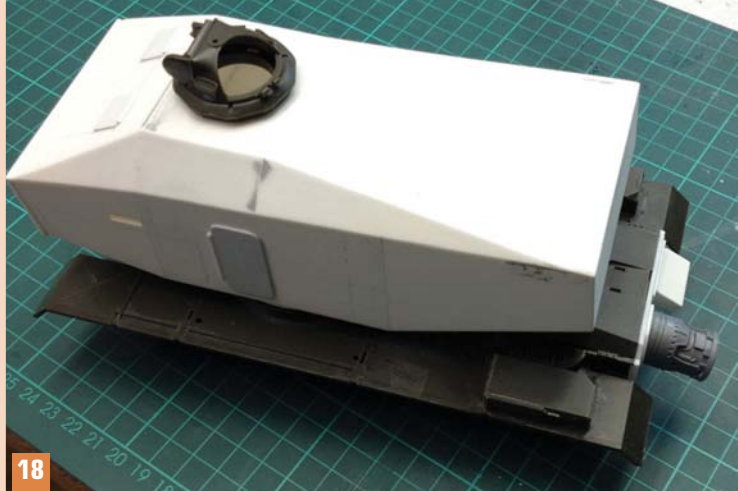
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Two access doors were cut from 0.5mm *plasticard* and cemented on each side of the turret. [14] Two hatches were also cut from the *plasticard* and cemented to the sloping front plate, hinges for these items being cut from 1mm plastic rod and glued in position. Handles were also added to each hatch, bent up from 0.5mm copper wire.

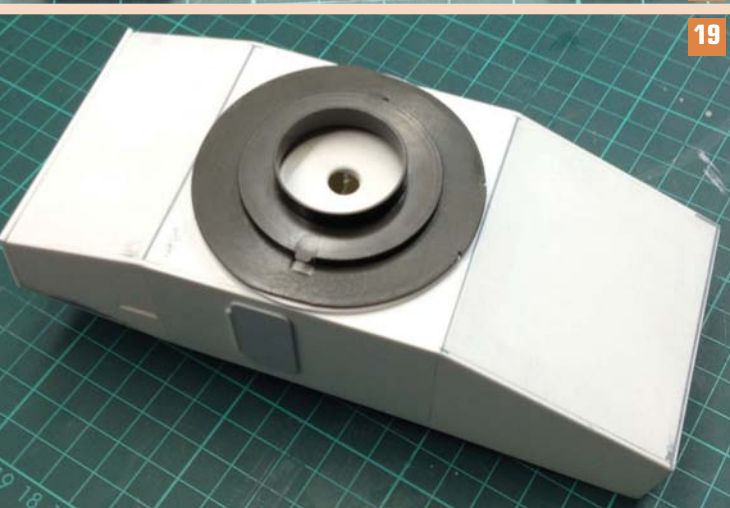
To add detail to the rear of the turret I found an etched fret designed for a 1/35 *Sherman* tank. I cut off two oval mesh screens and fixed these to two pieces of 0.5mm *plasticard* using *Johnsons Klear* which was sufficient to fix them in position without losing any of the etched detail. [15] Bolt heads cut from a 1/35 tank detail sprue were added to each corner of the *plasticard* panels and the two panels were then cemented to the rear of the turret.



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A series of holes spaced 7mm apart were drilled into each side of the turret to position the foot rungs, these being bent up from 0.5mm copper wire and superglued in position.

For some added detail I went through my 1/35 and 1/32 spares boxes. Some time ago a friend handed me a box of left-over kit spares from his 1/32 WW1 aircraft builds and the old adage 'never throw anything away' proved itself here – I found some parts from a *Mercedes* engine – they look like sump covers – and these were added to the rear of the underside of the turret. Additionally I found the two parts which make up the schnorkel for the *Patton* tank and one of these was fitted toward the front edge of the underside sloping panel.

Two discs of 40mm diameter were cut from 1mm *plasticard*, again using my *Olfa P* cutter. One of these would be used later as a base for the four-barrelled cannon. The second disc was cemented in position on the rear sloping face of the turret using a 2mm spacer under the rear of the disc to level it off. A 4mm wide *Evergreen* strip was then wrapped around the edge of the raised disc to

cover the gaps and excess strip was sanded off to give me a nice, flat, level gun mounting platform.

Two round vents were cemented to the top of the turret together with a joining strip from 0.5mm *plasticard*. Part of a radar assembly left over from a 1/32 *F/A-18* kit was modified and cemented to the rear of the turret in between the two mesh panels.

I had not yet finalised the design for the plasma cannon, so, to speed things along, I decided to cut and cement a basic front panel to the turret which would allow for the cannon to be fitted in position on final assembly.

The front panel was cut slightly oversize from 1.5 mm *plasticard*. Two rectangular viewing slots were cut and filed out as well as a 10mm diameter hole to locate the cannon. A piece of 1.5mm *plasticard* was cut to a height of 21mm and cemented centrally to the inside of the front panel to maintain the squareness of the turret front opening. The front plate was then cemented into position and, when set, the excess edges of the front panel were sanded off.



Additional details were added using short lengths of 2mm square *Evergreen* strip as sensors or detectors and turret lifting eyes were added from copper wire bent to shape. [26-28]

Two antenna mounting posts were made from 2mm and 1mm aluminium tube with some fine copper wire wound around the lower part of the outer tube. Some sprue was stretched to make a pair of antenna masts and these would be painted black and added at the end of the build.

This completed the construction of the turret for now.

### Kit hull modifications and assembly

The kit turret mounting ring was modified by cutting off the rear angled piece and sanding the turret mounting face smooth. An additional disc 72mm diameter was cut from 1.5 mm *plasticard* using the *Olfa P* cutter and cemented to the turret mounting ring face. This raised the turret up 1.5 mm to ensure it cleared the hull when rotated. Two small raised items on the hull had to be cut off, though, as they would have prevented the turret from turning. The modified mounting ring was then cemented centrally to the bottom of the turret.

[19] The two kit air filter boxes were designed to be mounted centrally onto the track covers, but I decided to fit them towards the rear and add some additional pipework at a later stage. The fittings moulded on the top surfaces were sanded off and details were added using *plasticard* strip.

The lower hull had some slots in the base as this kit was originally motorised and had provision for fixing a gearbox, switch and something else. These slots were covered over on the inside using pieces of 0.5mm *plasticard* and then filled on the outside surface with small pieces of *plasticard* and *Tamiya* filler.

The front of the upper hull has a driver's hatch and various slots for headlights and fittings. The driver's hatch was glued in position and the other slots covered over on the inside of the hull with *plasticard*. All the slots and gaps were filled with *Tamiya* filler and sanded off smooth. [16-17]

I now decided to cement the upper and lower hulls together... if I had missed any other holes that would require filling I would have to sort them later. [24-25]



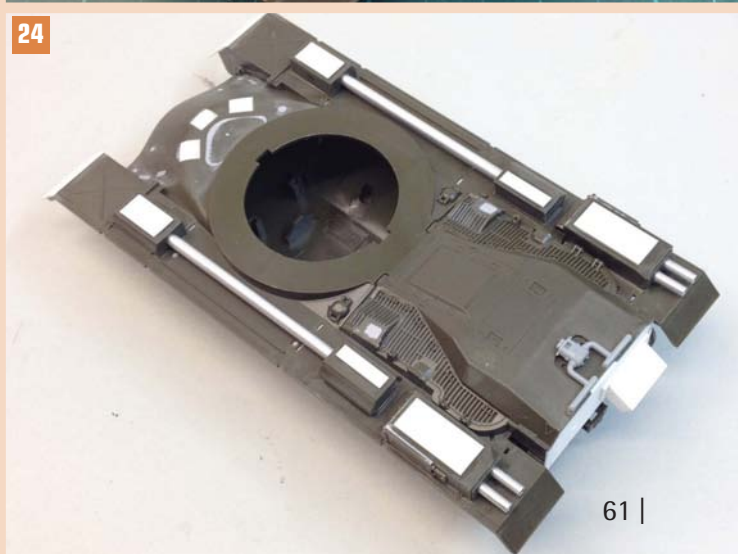
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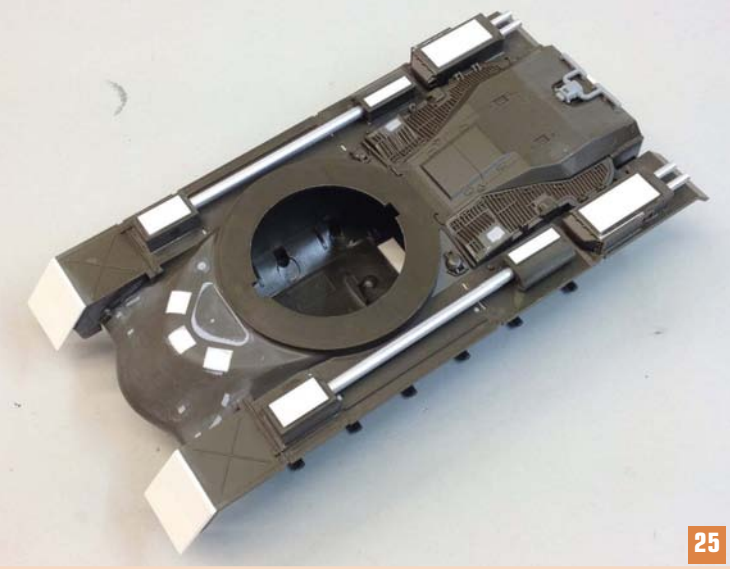
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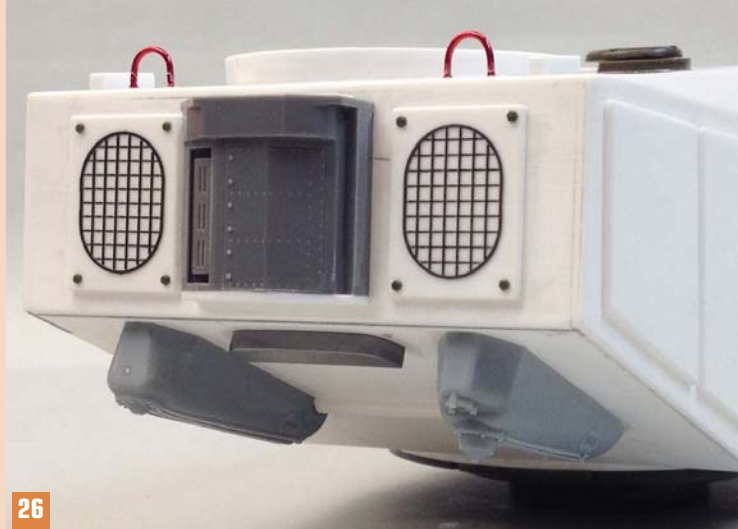
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The kit rear hull plate was moulded with ventilation slots, but, as I wanted to use this area for an exhaust and gas turbine outlets, this part would have to be replaced with a *plasticard* panel, so I temporarily taped the kit rear hull plate in position as I cemented the upper and lower hulls together. The joint at the front was very good and only required sanding to give a smooth finish.

A new rear plate was made up using the kit part as a template and cemented in position. The edges of the plate were then blended into the upper surface of the hull.

I had decided to fit a gas turbine engine as well as using the *V12* diesel engine.

The gas turbine engine would provide extra power when more speed was required and would also provide the power required for the plasma cannon! The part I used came from the tailpipe of a 1/32 *MiG-19* jet engine. Most twin engine jet aircraft kits supply you with a pair of engines, so if you build one up for display purposes you have the other as a spare. [22]

I cut the rear of the tailpipe at a slight angle to tip it down a little. A circular mounting plate was cut from 0.5mm *plasticard* which would secure the tailpipe to the hull back plate. I added a piece of 3mm diameter plastic rod to the mounting plate and drilled a 3mm hole in the hull back plate. This would allow me to fit the gas turbine engine in position after painting.

A rectangular exhaust outlet for the diesel engine was made up from 1mm *plasticard* with a splitter plate in the centre. The rear was also cut at an angle to allow the exhaust to face downwards. A mounting plate was made from 0.5mm *plasticard* and the completed exhaust was cemented into position onto the hull back plate.

Now to add some additional armour plate which was a common modification made in the field to operational tanks in WW2...

Plates of various shapes were cut from 1mm *plasticard* and added to the sides of the turret. Next, using kit parts, I assembled two small and two larger tool boxes.



The detail was sanded off and a 4mm hole drilled in their ends to accept 4mm diameter aluminium tube. The boxes and tubes were cemented to the track covers and the tops of the boxes were detailed with small pieces of *plasticard* strip. [24-25] These assemblies housed the Tesla coils and also enabled the plasma beam to be directed away from the cannon to the periphery of the hull acting as an electromagnetic field for additional armour. Another WW1 engine fitting, probably an intake manifold, was cemented to the rear of the upper hull.

The general detail on the engine deck is comprised of vents and fuel filler caps, etc. and was left as is.

The kit suspension arms were then cemented in position on the lower hull as per the instructions. The twelve road wheels were made up, together with the idler rollers and drive sprockets and

would be fitted after they had been painted and weathered. The ten idler rollers were cemented via their axles in position on the lower hull.

### Side skirt armour

I decided to add some side skirt armour plate to cover part of the wheels and track which would also add bulk to the hull. The side plates were cut from 1mm *plasticard* and would be added to the edges of the hull after painting. As the edges of the tracks just protrude out from the edges of the track guards, the side skirts would have to be spaced off about 1mm – I therefore cemented 1mm thick strips of *plasticard* to the top edges of the side plates. Vertical panel joint lines were engraved in four places. Additional armour plates were cut from 0.5mm *plasticard* and added between the panel joint lines. [31]

### Six barrelled Gatling gun

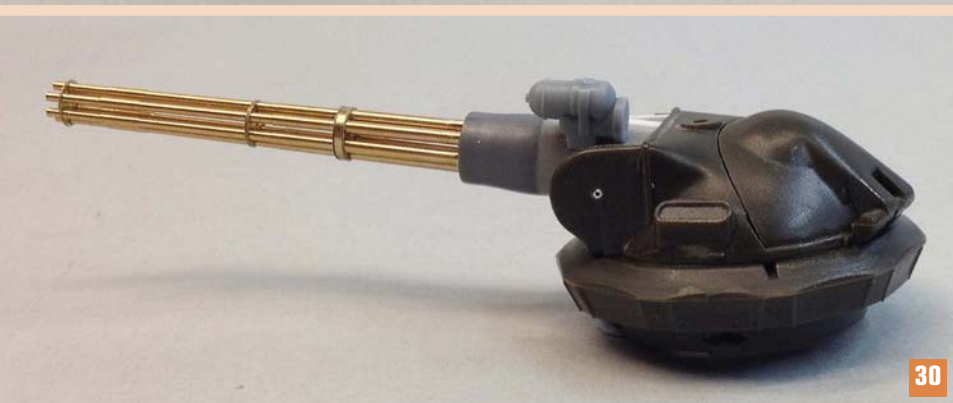
I had proposed to make this item up from aluminium tube but, as I use *Master-Model* turned brass barrels on some of my aircraft models, I thought to see if they could offer anything suitable. Checking on their website I found a four barrelled set in 1/35 scale, but in 1/32 scale they offer the *M61 A1 Vulcan* six barrelled gun. *Perfect!* I chose to use this set as it solved the problem of making what would have been a very complex item.

The gun [29-30] consists of the six barrels and six etched discs which group the barrels together at various points. To assemble the gun I placed the etched base disc on a flattened piece of *Blu Tack* and stood the six barrels vertically on it. I then slid the remaining discs onto the barrels as per the instructions and superglued the base disc to the rear ends of the barrels. When set I used *Klear* applied with a small brush to fix the remaining discs in position, which avoids any build-up of excess superglue which would have been difficult to remove.

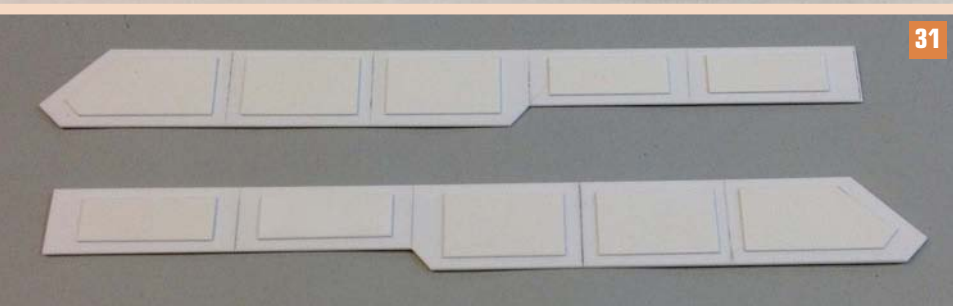
For the main body of the gun I used part of a missile body which, when trimmed, accepted the base disc of the barrels. This was then cross-drilled to take the 1mm aluminium pivot tube.



29



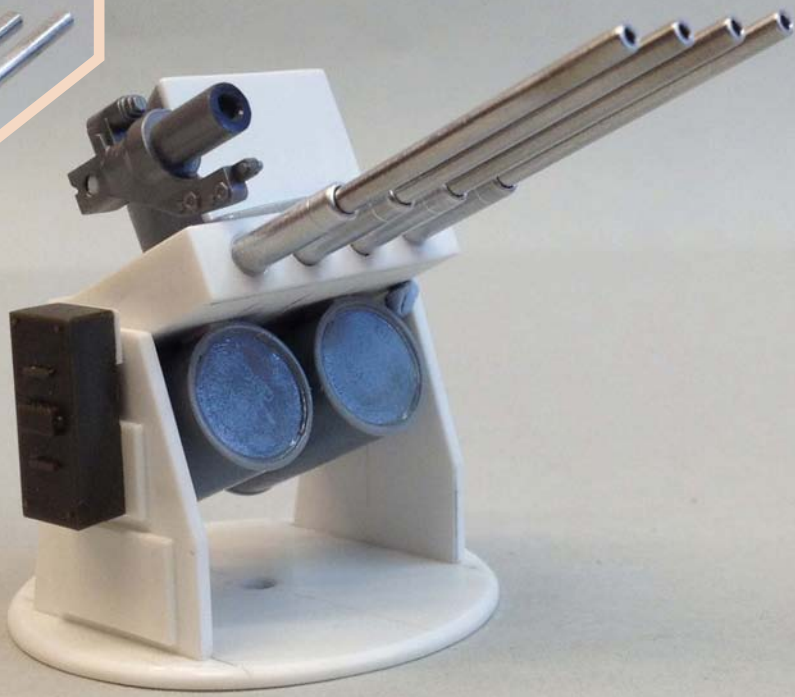
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The gun base disc was superglued onto the end of the main body making sure it was concentric with the barrel assembly. I added some detail parts from my spares box to the main body to imitate the electric motor drive and other mechanical parts and the kit cupola gun mounting ring was also drilled 1mm each side to receive the pivot tube.

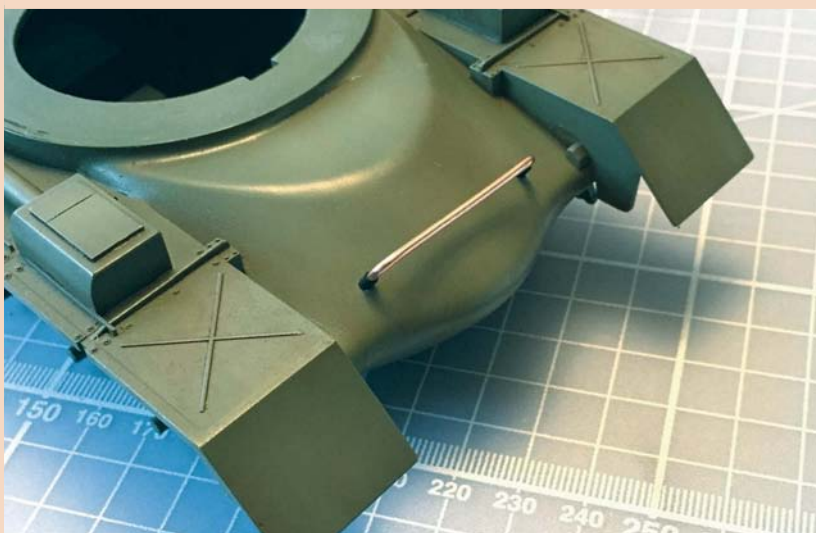
A small radar scanner was made up from a piece of half round section with a narrow strip of *Evergreen* cemented to the front face. The scanner was cemented to a length of 1mm plastic rod, and would be fitted to the mounting hole in the cupola on final assembly.

#### Four barrellled automatic cannon

This weapon was designed to be totally over the top as far as secondary armament for a tank was concerned. I proposed a four barrellled 30mm cannon, with automatic radar tracking and firing – probably something the tank crew found in the local armament scrap yard and adapted for their use... So, if the chap with the *Gatling* gun missed, this weapon should solve the problem.

The barrels would be made up from 3mm and 2mm diameter aluminium tube. I cut four pieces of 3mm tube 32mm long and four pieces of 2mm tube 60mm long. They were all cleaned up and polished by fitting them in the chuck of my *Makita* cordless drill.

It would have been nice just to drill four 3mm holes into a piece of 6mm thick aluminium or



plastic to make up the breech block, but having no access to a pillar drill at this time I fabricated the item as follows:





I cut a 20mm wide strip of 1.5mm *plasticard* as a base plate and marked out the position of the four short lengths of 3mm aluminium tube. The first tube was superglued in position using my square as a guide to ensure the tube was at 90 degrees to the base plate. The remaining tubes were superglued in position using a further piece of 3mm tube as a spacer and the base plate was then trimmed off to a width of 26mm.

A further piece of the 20mm wide strip was added on top and superglued to the tubes to make a sandwich.

A piece of 1mm *plasticard* was marked out and four 3.1mm holes were drilled at a pitch of 6mm to provide a front cover for the breech block. The piece of card was trimmed down to a width of 6mm and length of 27mm, slid over the barrels and cemented to the breech block. The 2mm diameter tubes were then slid into position to check all was in line and parallel.

The front cover was sanded down flush with the breech and strips of 1mm *plasticard* added to the three open ends.

The vertical axis shaft was made from a piece of 2mm tube, cut to length and superglued to the underside of the breech block. I piece of 1mm tube would then be used as a pivot.

For ammunition drums, two 1/48 fuel drums were assembled and the centre bands sanded off.

These were cemented under the breech block using *plasticard* strip to space them off a touch.

Another spare from my WW1 spares collection, quadrant shaped, was used as a targeting radar unit, the open side faced with 0.5mm *plasticard* and cemented in an offset position on top of the breech block.

I had some spare parts from a motorbike kit and I used one of the front fork ends for an additional targeting sensor which was mounted on the side of the radar unit. Some wiring from 0.5mm copper wire was added from the ammo drums and the radar unit to the breech block.

The gun mounting frame base was made from two discs of 1mm *plasticard* 40mm in diameter as described earlier. One disc had already been fitted to the top of the turret.

The side frames were made from two pieces of 1mm *plasticard* cut to shape and drilled 1mm diameter at the top end to take the pivot pin. They were then cemented squarely to the second disc using the breech block as a spacer. Additional small detail plates were cut and cemented each side of the frames. [32-33]

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A small ammo box from the kit provided me with a vertical axis servo and gearbox unit which was cleaned up and cemented to the left hand side of the frame. The completed unit looked good enough for now.

### Plasma cannon

The *MiG-19* jet engine supplied me with another part, the air intake section, which would be the basis for this weapon. I used a razor saw to cut off the section I required and then sanded both ends square. A base plate was cut to shape from 1mm *plasticard* and two holes 2.2mm diameter were drilled into the plate either side of the weapon. These would take two M2 screws to secure the unit to the front of the hull. The section of engine was then cemented centrally to the base plate.

For lighting the plasma cannon I decided to use three fibre optic cables and light these with a single 5mm blue LED. Three equi-spaced 2mm diameter holes were drilled in the base plate to locate the fibre optic cables within the area of the engine section. The idea behind this arrangement was to give the impression of a triangulated laser targeting beam which would then switch over to a full power plasma beam and vaporise anything in its path. *Excellent!*

The blue LED was connected with a series 410 ohm resistor to a 9v battery clip.

The LED was inserted into a short section of plastic tube and secured with plastic tape. Three 150mm lengths of fibre optic cable were secured together with plastic tape and inserted into the opposite end of the tube butting up to the lens of the LED. The opposite ends of the cables were pushed into the holes in the rear of the unit's baseplate and superglued in position. The finished assembly could now be fitted to the front of the turret with the LED, battery clip and 9v battery laying within the hull.

### Painting

After a good wash in warm soapy water we were both ready for some paint! The basic colour would be olive drab, but faded with lighter shades in certain areas.

I would also apply a digital camouflage scheme on the armour plates. I did not intend to camouflage the whole tank in this way, just these few areas on the turret to break up the olive drab finish.







The hull and turret were first sprayed with a thin coat of *Humbrol Satin Grey* as a primer to blend in the different materials and also show up any flaws in the filling and sanding.

The turret armour plates and sides of the turret were then sprayed with a coat of faded olive drab which had been faded right down with a fair amount of gloss white. This lighter shade would give a contrast to the digital camouflage.

For the masks I cut strips of *Tamiya* tape 5mm wide and used these in sizes ranging 25 to 10mm long with additional masks cut to 5mm square.

When the paint was totally dry I applied the masks onto the armour plate and turret sides in various random patterns, which was a most enjoyable exercise. The hull, turret, side skirts, cupola, both gun parts and the main road wheels were then sprayed with *Xtracolor Faded Olive Drab*. The masks were then removed from the turret.

Next I mixed some faded olive drab with a little gloss white and shaded the hull, turret, and gun

parts mainly in the centre of all the raised areas in a random pattern until I achieved a nice contrast to the original coat. This also reduced the contrast of the digital camouflage.

The only other colour I used was a coat of *Humbrol Satin Black* on the brass *Gatling* gun barrels assembly, the gas turbine outlet and the plasma cannon. When completely dry these parts were dry brushed with *Humbrol 56 Matt Aluminium*.

Just for the record, I use a *SataGraph 2* airbrush, *Xtracolor* and *Humbrol* enamel paints, thinned about 50/50 with white spirit and sprayed at about 15 to 20 psi as an average. For protecting the enamel paint against damage from an oil paint wash, I sprayed a coat of *Johnsons Klear* over the finished shaded camouflaged items. The model was then washed with diluted oil paints – raw umber, burnt umber and *Humbrol Dark Earth* – making sure the darker washes got into all the recesses, corners and edges.

The *Dark Earth* wash was applied to the wheel hubs and rims to give a dusty dried mud

appearance. Some paint chipping was now applied to various areas. A good way to apply the chipping is to use the tip of a piece of sponge of the type found in most electronic component packaging. The tip of the sponge is dipped in some dark grey paint and then dabbed on a piece of paper to remove most of the paint. The sponge is then carefully dabbed onto the surface where the chipping is required. It's a bit like the dry brushing technique, but with a sponge!

The rubber tracks are well moulded and quite usable, especially as the top run is hidden from view by the side skirts. First they needed a wash in soapy water and were hung up to dry. The tracks were then sprayed with a coat of *Humbrol Dark Earth*. When the *Dark Earth* had dried the raised rubber sections were dry brushed with *Revell no.9 Anthracite*.

The tracks were fitted around the wheels and sprockets with the join at the top. The pre-painted side skirts were then attached to the edges of the track guards using small spots of superglue. There was some slight untidiness where the joints were, so I carefully sanded the joint line down, mixed up a small amount of *Faded Olive Drab* paint and

carefully sprayed along the joint line.

Now the entire model was cleaned up from all dust and bits and pieces and sprayed overall with *Humbrol Matt Cote*. When dry *Dark Earth* paint was dry brushed onto various areas along with some steel colour for wear and tear and some further paint chipping.

The two antenna were superglued into the masts and, finally, the small radar scanner was fitted to the cupola.

Well, that concludes the build. I could have added more dust and dirt but was happy with the way it looked without.

Some of my 'friends' have said the thing would fall over as soon as it turned the first corner, but I told them that the turret and guns were made from an alloy harder and lighter than titanium and the entire vehicle would also be stabilised by the Tesla coils.

I also told them 'No. It won't. Go away.'

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# Six wheels on my wagon

## Andy Pearson takes Century Castings' new Amphicat kit for a spin

IT'S ONE OF THE UNWRITTEN RULES AT *SF&FM* THAT REVIEWS OF SUBJECTS RELATED TO *SPACE: 1999* tend to be the province of the Editor-in-Chief. That's not a bone of contention because the regular contributors know that he loves the subject deeply and is probably the best informed amongst us on it.

Anyway, that's enough crawling to the management for one article.

In this particular case Mike, along with Uncle Dave, was heavily involved with editing the next issue and couldn't find the time to do this model justice although, as a new release, the word regarding its availability needed to be spread at the earliest opportunity, i.e. in the volume you are reading now.

The basics are that this is a resin kit in 1:12 scale from *Century Castings* and represents an *Amphicat* which featured frequently in *Space: 1999* as the *Moon Buggy*. As regular readers may know, real *Amphicats* were used in the show in combination with renditions in model form so, when it came to building the lunar runabout, there

was no shortage of references available. I was also in the happy position, despite not being any sort of authority on the popular series, of having seen one of these vehicles in the flesh, although not in *Moonbase Alpha* livery.

The kit itself is nicely cast and needed but a little filler here and there before the inevitable wash, prime and paint stages but I had been warned in advance that the wheels (each supplied as two halves) needed some work. The tyres on the actual vehicle have a chevron tread pattern but those supplied with this kit had a pattern of straight treads at 60° to the axle. My briefing was to do something about the anomaly if possible but, if that task was too onerous, to leave well alone and just feel inadequate.

Truth to tell, the wheels are a very prominent feature of the *Buggy*, not least because there are six of them, and I do enjoy a challenge even with a







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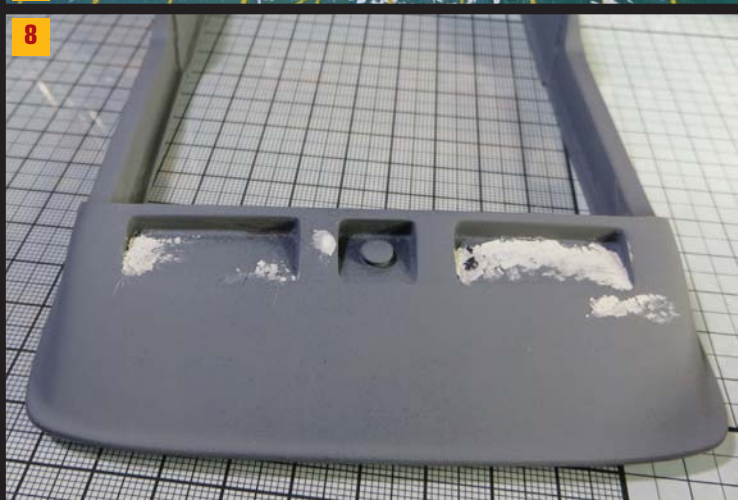
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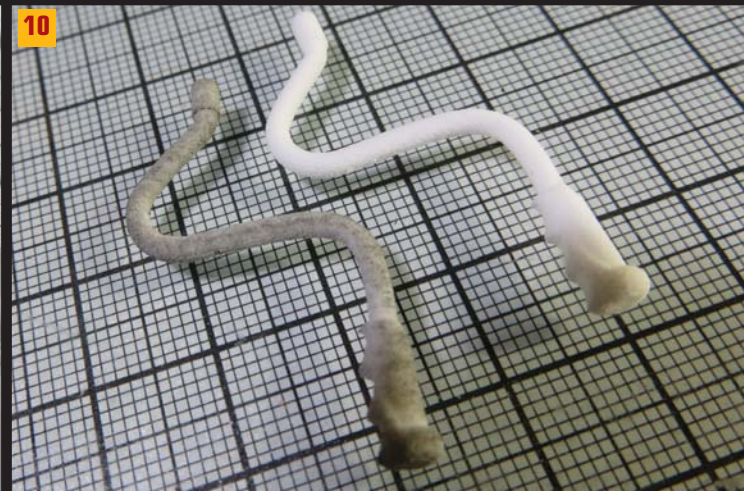


looming deadline. After due consideration and a search through the various materials in stock, it occurred to me that I could duplicate the individual treads by shaping lengths of 1.5mm half round *Evergreen* strip. The only slight problem (at the time) was that I didn't have more than a couple of inches of that particular profile to hand. A visit to the only retail supplier in Manchester (UK) revealed that they didn't have any either so it was to the internet I next turned to order the materials needed.

the treads off the surface and then files and wet and dry (used very wet) abrasive paper to smooth the surface. Just by way of a thinly disguised note of caution, I try to avoid using power tools when working with resin to cut down on the fine dust that ensues. This process went well although I did make a passable attempt at amputating my thumb, which was distressing as it's part of a matching set and I've grown very attached to it over the years.



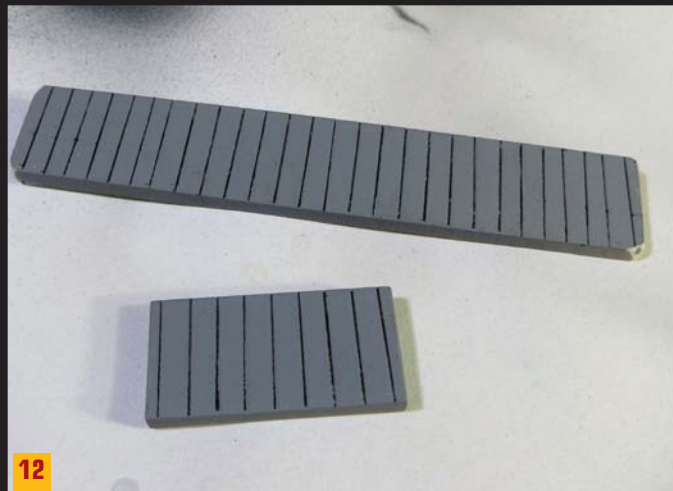
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I then set about removing the errant tread pattern from six wheel halves. This was not difficult and I used a sturdy craft knife to carve

The carving, cleaning, bandaging and weeping like a child took a couple of days, during which I looked forward to my plastic strip arriving at any moment,

1: the component parts. 2: the wheels as supplied. 3: some filler required here and there. 4: removing redundant tyre tread. 5: pencil guide lines in anticipation of new tread pattern. 6: tread removal proceeds. 7: filler to wheels. 8-9: filler applied where required. 10: control handles. A thin graphite dusting (left) shows 3D printing texture. 11: main body parts with paint. 12: seats with pen lines to enhance texture.

as the supplier was just some ten miles from home and I'd paid for express delivery. Ten days later, I was still waiting, despite a couple of follow-up emails asking where the h\*\*l the stuff was.

Once the strip arrived and I'd refreshed the snail delivering it with a saucer of milk, I cut 102 new treads to length (my thumb was now on the mend and thank you for your concern), shaped the ends to match the moulded resin treads and stuck the resulting strips to the now bald tyre halves. To aid

them with the resin. I then realised that, as each resin wheel was an exact duplicate, the wheel hubs would be on the wrong side of the wheel in three cases.

To overcome that problem I took a silicone mould from a hub, pushed a disc of grey/green *Milliput* into the wheel centres and used the mould as a stamp to duplicate the hub pattern, a technique that worked rather better than I had anticipated.



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accuracy, I created 60° pencil lines round the surfaces of the wheel halves I was going to work on. I glued the wheel halves together and then used a medium consistency superglue to fix the new treads in position, followed by some filler to blend

Thanks to the woeful service from the strip supplier, deadlines were now looming but I had been able to paint the body of the *Buggy*. I'd been told that *Halfords Ford Signal Yellow* was the car body colour to use and had bought a can of this

13: seats with paint coat. 14: silicone 'stamps' for replacement hubs. 15: new *Milliput* wheel hubs. 16: cutting and shaping 102 new tyre treads. 17: adding new treads. 18: new tread patterns before final shaping. 19: amended wheels after shaping and priming. 20: a very comprehensive decal sheet. 21: painted wheels before and after initial weathering. 22: interior view. 23: magnets to hold the engine cover in place.





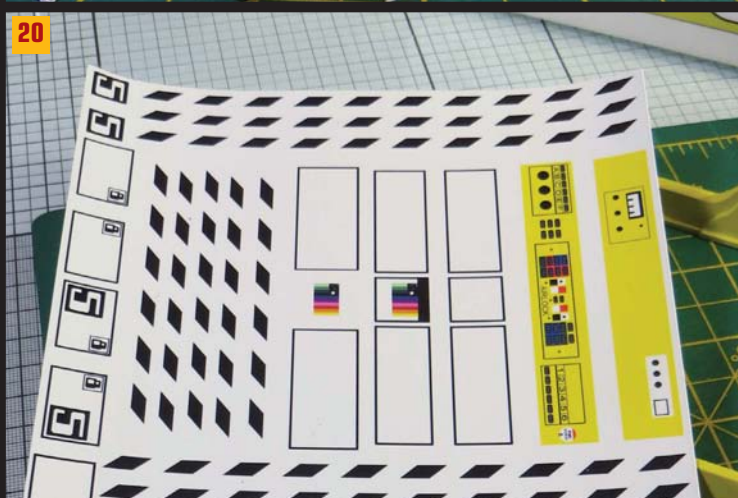
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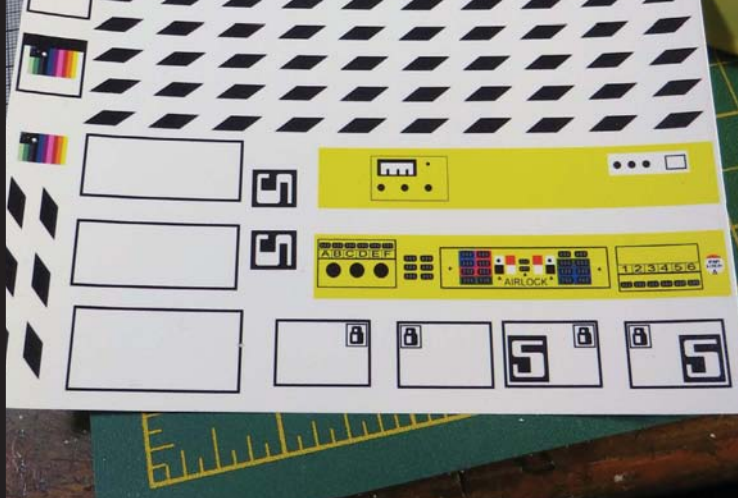
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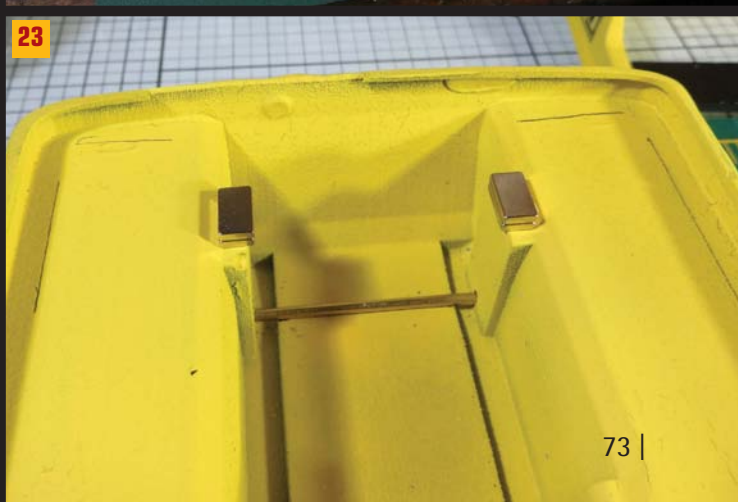
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just as the wind swung round to the north and the weather closed in, precluding any work outdoors. I did, however, find a very good match in Humbrol's acrylic range, specifically *Lemon Yellow 99*.

On the 'things to review' pile was a new *Neo* airbrush and this seemed like a good opportunity to test that, of which more elsewhere in this issue. [See page 77.] As the paint had a matt finish I gave it several coats of a purity seal in anticipation of applying the decals. The decal sheet supplied seemed fine and included quite a few spares and duplicates (I wish more manufacturers would do this) and so I set about applying the first one to the dashboard. I had heard a fellow professional modeller speak well of the decals supplied with the kit and so expected no problems. Did you anticipate the 'but' that is to follow?

The first one seemed very thin and wrapped itself into a tangled blob as soon as it began its slide from the backing sheet. To make matters worse, by the time I had recovered it the image had begun to run which, whilst not a career first with decals, is unusual. To avoid similar problems I

airbrushed the remaining decals with several coats of *Microscale* liquid decal film which seemed to do the trick and gave me a clue to what the problem had been. The protective cover and instruction sheet for the decals noted that 'The paper has already been sealed with 3 coats of spray varnish.' I suspect that, with the sheet I had, this was not the case, hence the lack of colour fastness. I next replaced the blurred and damaged decal area with bits and pieces from the spares box and this worked reasonably well.

With regard to the overall dashboard layout, several alternatives were provided but I chose to follow the reference provided on the instruction leaflet and here an interesting conundrum presented itself. The dashboard decal I was using gave a complete run of instruments including, on the right hand side, switches (or something) numbered 1-6 and an 'AIR LOCK' panel. On the instruction sheet showing the completed model as a guide for the decals this section seemed to have been blanked out using masking tape or something similar. Having come across an on-line image that included this panel I decided to leave it in,



Above inset: wing mirrors. 24: control handles and restored dashboard decals. 25: LEDs – now just for decoration. 26: foot pedals added. 27: alien planet base under construction *plus FREE bonus picture of Nigella Lawson. Isn't she lovely!*





knowing that it would be easy to remove or over-paint if someone wants to make changes. Speaking as a novice as far as the *Alpha Moon Buggy* is concerned but having some small insight into the special effects regime followed by the Anderson production teams, I suspect that variations occurred across the lifetime of the scale model versions of the machine during the filming of the shows.

The rest of the decals went on with the help of *Microsol* and, as all the decals were on the upper half of the *Amphicat*'s body, I set this part aside to give them chance to dry. The next step was the fitting of the LEDs, wiring and battery box as the kit came with working lights. The wiring was soldered following the diagram provided, a new 9 volt battery fitted, the switch thrown and... nothing.

Were I an expert on matters electrical I might have been able to diagnose the problem but I'm not and I couldn't so the lights were now in place but they were purely for decoration. The engine compartment fitted over the redundant battery box with magnets and these were glued in place. Two more magnets at the front edge of the upper body were intended to hold this in position but I couldn't get them to link up so the body was glued with a few dabs of PVA in anticipation of someone wanting to do a re-wiring job in the future.

Details to be added included the two control handles, 3D printed so a little smoothing of the surfaces was needed. There were also two rear-view mirrors which were painted gloss white and had mirror faces added, cut from aluminium kitchen foil. Two further additions were the foot pedals, cut from black card. These were extra to the kit components supplied but as best I recall are part of the real thing, which steers like a tracked vehicle by braking the wheels on the relevant side using the control levers but obviously still needs both accelerator and brake. A final touch, again not included in the kit, was the inclusion of an aerial on the rear engine cover. Some weathering was added to wheels and body using pigment powders. The base was vivarium grit on a foamcore board base with track prints provided by the model itself and one or two alien environment odds and ends added which meant that the *Buggy* is not shown on a lunar surface – but then the *Alphans* did get around a bit and perhaps still do.

Overall, this was a nice little kit to paint and build and I suspect that the finished model might find its way into Mike's collection in the near future. Make him an offer.

*Review kit kindly supplied by  
Century Castings.*







The kit with a little friend (not supplied).

Airbrush reviews have, in the past, been handled by colleagues who are more deeply steeped in the technical aspects of the tools in question. In this case it was thought that an overview from a general modeller might be useful as the Neo provided by the UK distributor seems to be marketed as one for the first time or occasional airbrush user. Let me say that the description doesn't apply to me as I've been using airbrushes frequently and often for years but, rather like a modern car, I can drive one and carry out basic maintenance but don't really 'do' the technicalities.

## Worth blowing a few pounds on?

### Andy reviews the Neo for Iwata Airbrush Kit

#### The Airbrush

First things first. The product in question is the Neo for Iwata Gravity Feed Airbrush Kit which includes a dual-action, gravity feed airbrush, a desk-top compressor, 3 bottles of water-based acrylic paint, a bottle of airbrush cleaner, a basic 'getting you started' leaflet and links to on-line instructional material.

There's a clue in both the product name and the packaging as Neo for (as opposed to 'by') Iwata and the words 'Assembled in China from Components of Taiwan' would seem to indicate that this isn't a thoroughbred Iwata product. Having said that, it's the final quality that counts and if Iwata are prepared to put their name on it and offer a five year warranty, that's good enough for me.

The brush itself is well made, nicely balanced and comes in a very well presented cardboard window box that seems sturdy enough to provide a durable storage facility. There's a 0.35mm needle and nozzle combination and the interchangeable 7cc and 3cc paint cups are an interesting and useful feature. The larger cup is supplied with a lid.

Within the bowels of the beast the configuration follows the basic gravity-feed airbrush design but



with a couple of nice touches that seem novel to me, as I drive a *Badger 200* for most of my work. The base of the trigger, where it meets the air valve, consists of a sphere which helps give a very smooth feel to the control of the brush by reducing friction. The back lever is also permanently hinged to the needle tube which may sound unremarkable but is, I would imagine, a boon when cleaning the brush as it is one less small component to lose.

As suggested above, the action is smooth and positive and I found the operation very comfortable even though I'm now down to two fully-functioning fingers and a thumb on my right hand. I've watched a couple of on-line reviews of this airbrush in the course of preparing this article and, in them, concern was expressed about the ability to remove and replace the needle tip which seems to be factory sealed. A spanner is provided should you wish to replace the tip but, as the review model was on loan, I was disinclined to try it out. The concern seems to centre on the delicacy of the needle tip due to its (unavoidably) small size. All I would say here is that I was once told that it was impossible to remove the needle tip from a *Badger* airbrush without ruining it. It isn't, although one needs a touch like a midwife and a bit of practice.

Should you need to strip the brush down for cleaning, everything is beautifully machined and removing the needle, needle tubes, spring, screw and chuck is simplicity itself and, in the event of mishap, I understand that spares are readily available. By adjusting the shank (if that's the correct word) that holds the needle tube it is also possible to alter the trigger pressure, although the factory setting suited me very well.

#### The Compressor

My own compressor is a great lump of a single-cylinder job of unknown vintage but (touch wood) it keeps on keeping on. That being the case, I've never used a compact compressor before and this one seems to me very compact indeed, measuring





approximately 95mm (3¾ inches) x 130mm (5 inches) x 65mm (2½ inches) deep, including its small supporting legs. In terms of ratings, the motor is 12v DC giving an airflow of 0.21 CFM (6LPM) at open flow. If you're impressed by the sudden burst of technical data, I should point out that I've just read that from the specification panel on the bottom of the machine itself. The compressor is provided with four international plug adaptors.

Operation is via a seemingly simple on/off switch on the compressor's rubber casing but this is rather cleverer than it looks. Press once and you start with a medium pressure, twice and you have the highest setting and three times and you're using low pressure. Press once more and the compressor is off. Each pressure level is indicated by a change of colour on the neon in the on/off button: purple, blue, red. The pressure range is between 4 and 15 psi (0.3-1.0 Bar) so I would suggest that you are not likely to use this piece of kit if you're going to re-spray the car but the airflow is very smooth.

I should, perhaps, add that there's a clip-on rubber airbrush holder that fits on the right hand side of the compressor and that produced an interesting phenomenon. Obviously there's a certain amount of vibration when the compressor's running but, with the airbrush in its holder, I found that the little rascal gradually made its way across my worktop, following the direction of the brush's handle and towards certain doom on the floor below. Having said that, one is unlikely to leave the brush on the machine whilst it's switched on very often or for very long. That remark leads me to another point. The compressor will switch itself off after about ten minutes, presumably to avoid over-heating. I found that it was also reluctant to re-start after just a minute or two's use but I assume the reason is the same. If there's an internal cooling fan (and I'm assuming there is), once that is off the temperature within the compressor will rise, triggering the cut-off.

As I had me grubby hands on the *Neo* for a limited amount of time I thought it wise to push several different pigments through and try it in various situations. First of all I airbrushed some of the *Com-Art* colours supplied with the kit, using the three pressure settings and, as best I was able to judge, similar trigger pressures and distances from a sheet of paper. The colours supplied have the properties of acrylics but use a natural binder so they're suitable for paper, canvas and the like.

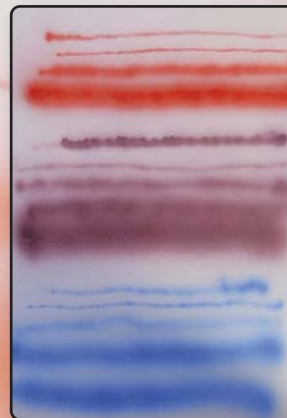
For modelling purposes, I needed to try some rather more serious stuff and, as I was working on

Top to bottom: spray pattern test on paper. Top to bottom: low, medium and high pressure. *Vallejo* primer coat. Shading applied. Colour tests.

a commissioned model of an *Amphicat* vehicle, that seemed a good place to start. The section of the vehicle involved had received a coat of *Halfords* grey primer and, using the *Neo* with the compressor on the highest pressure setting, a nice, even coat of gloss yellow acrylic was soon achieved. I then found a resin pilot figure of unknown providence and vague scale but around 1:13. I primed this with *Vallejo* surface primer which ran through the *Neo* with ease on the medium pressure setting. To see how the brush coped with more detail, I put some dark grey *Tamiya* acrylic through it straight from the jar and un-thinned. This was at the low 4 psi pressure and produced quite a decent shading line. I finally tried a European flesh tone and a yellow on the life-jacket with a little masking on the latter. Again the results were satisfactory with quite a tight spray pattern.

Overall, this is a rather good little ensemble with a very nicely engineered brush and a compressor that's suitable for smaller jobs and I would be tempted to acquire one for myself as a back-up airbrush. The portability of the compressor is a particularly attractive aspect of the kit for someone who takes his or her airbrushing skills on the road and would provide an ideal way of annoying fellow passengers on a train journey. At the time of writing the recommended retail price of the *Neo* kit is £190 which seems to represent good value but fluctuations in the exchange rate and retailer competition will obviously affect that.

Review sample kindly supplied by *The Airbrush Company*.  
[www.airbrushes.com](http://www.airbrushes.com)





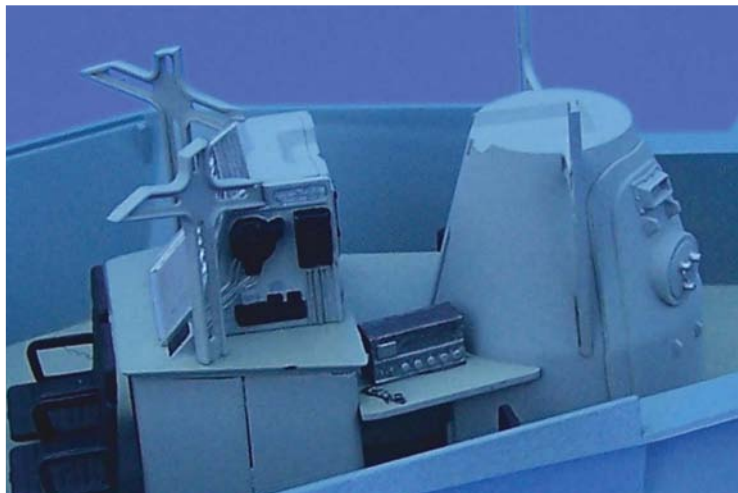
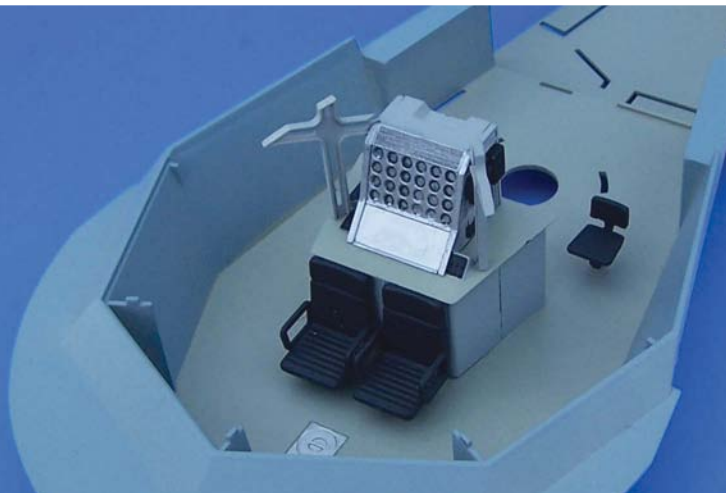
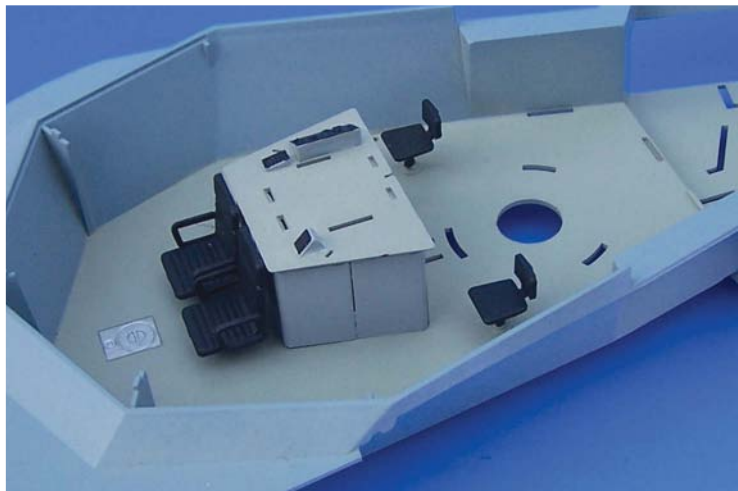
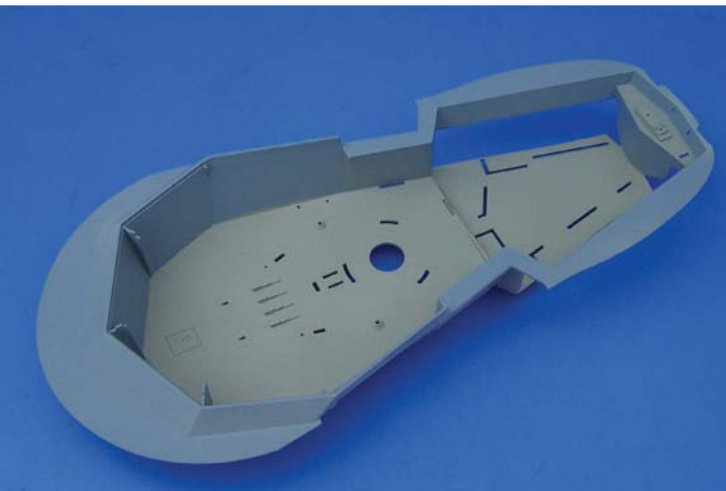
# Micro Surgery

Mike Reccia scrubs up for a trip aboard the USN U-91035 (or the Proteus from *Fantastic Voyage* to you and me).



Image courtesy of Moebius.

AS AN ELEVEN YEAR OLD WAY BACK IN 1966 I VISITED THE LOCAL FLEA PIT (YOU COULD SEE THEM DANCING ON THE SEATS. NO. REALLY.) ONE EVENING TO WATCH *Fantastic Voyage* with a friend who lived in the same street. Sitting in one of the sticky, red plush, fold-down seats (I was blessed in that mine actually worked) in the ironically titled *Grand Cinema* before the feature I was slightly apprehensive as to what might be graphically depicted in the film I was about to see, being more than a little squeamish about ‘operations’, blood, eyeballs, people’s insides and other squidgy stuff. I needn’t have worried, however, as I subsequently spent the next hour and forty-one minutes glued to the big (and slightly grubby) screen, marvelling at the adventure and the (then) breathtaking special effects. Of particular fascination was the *Proteus* submarine, a superb design by Harper Goff (also responsible for the look of *Disney’s Nautilus*) that I still admire to this day. It was therefore with a

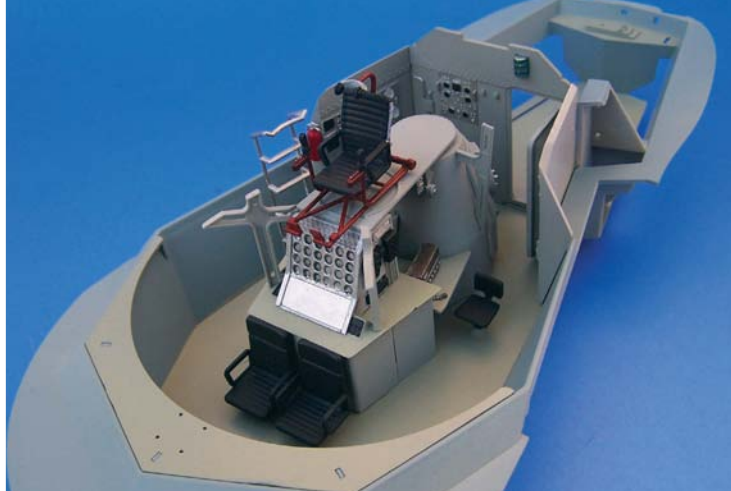
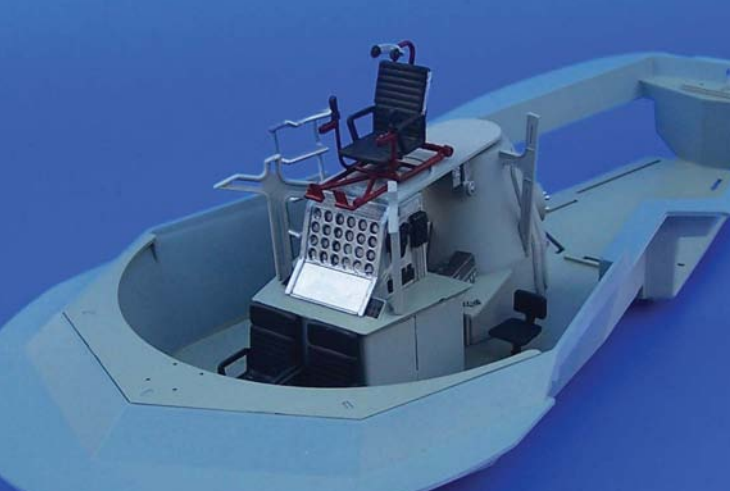


frisson (always wanted to use that word – note to self: remove from bucket list) of excitement that I recently took delivery of a box containing a test shot of *Moebius Models'* much anticipated new 1:32 scale rendition of the classic submersible – remarkably the first ever injection plastic release of this ever-popular SF modelling subject.

As expected based on past releases, the *Proteus* has been meticulously recreated by *Moebius*, an initial examination of the test shot sprues revealing

hull halves, a circular base and cowl for the bubble dome, top and bottom hatches, separate diving planes, a rear rudder section, ventral fin, front intake back plate and side vent pieces plus parts from which to construct a comprehensive and highly detailed interior. No crew members are included, although *Moebius* informs me that these will be offered as an aftermarket set by *Jimmy Flintstone* ([jimmyflintstonestudios.com](http://jimmyflintstonestudios.com)). Transparent parts are supplied for the dome, the



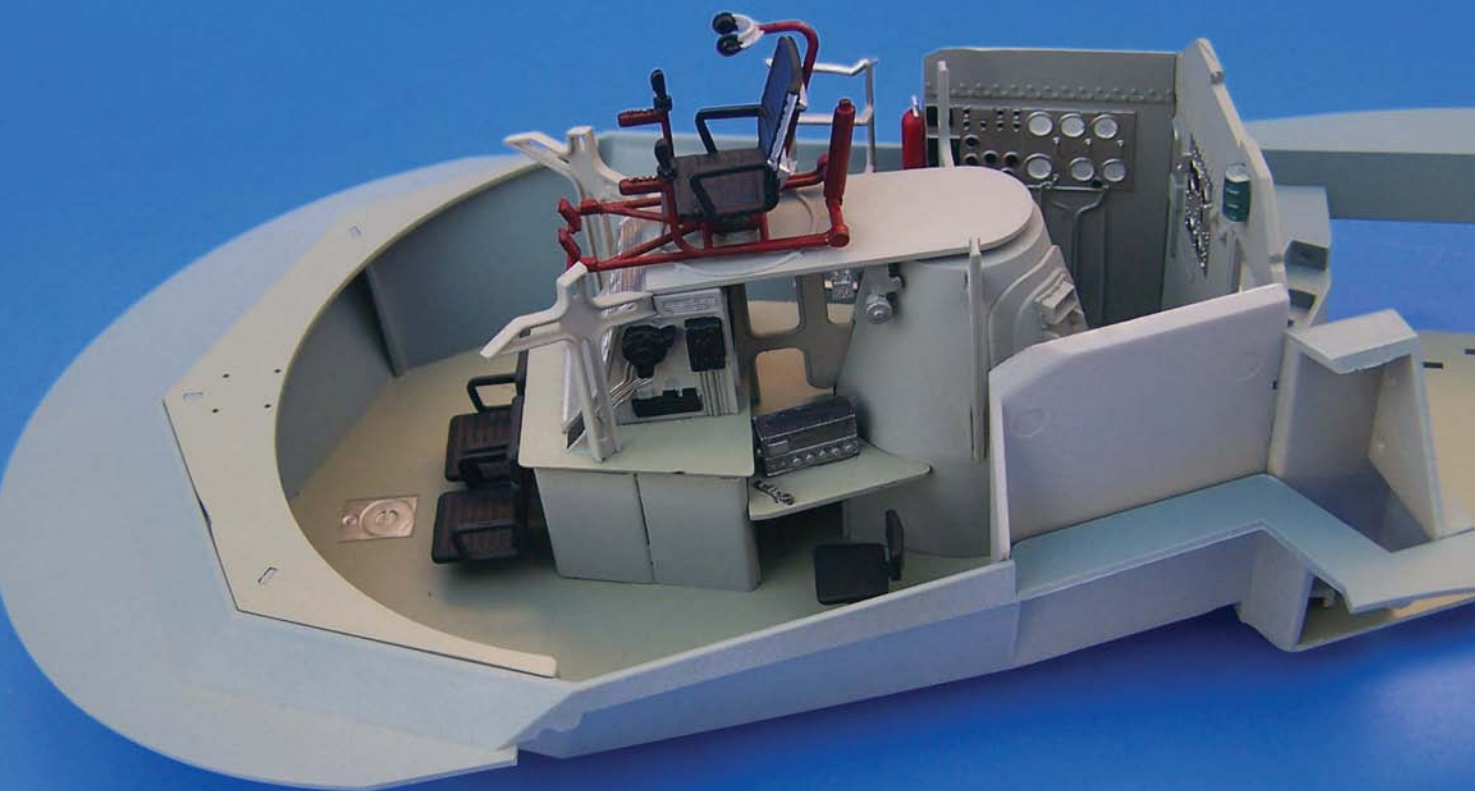


front window area and the surround to the oxygen-gathering sucky-thing that sits on top of the sub behind the top hatch, plus two stand pieces that mimic the look of the rests the sub sits on prior to being miniaturised. However, this being a test shot, the transparencies were somewhat frosted, something I would be able to remedy to some extent later in the build thanks to a tip from modelling mate and fellow teamster Andy Pearson.

In preparation for the build, and armed only

with diagrams of the parts I had downloaded and printed out courtesy of *Moebius* (it was too early in the development programme for instructions or decals to be included with the shot) I spent a couple of hours one Sunday afternoon studying the blu-ray of the film and pausing/rewinding the interior *Proteus* sequences so that I could scribble down the various colours I would need to reproduce next to the parts on my printouts.

The individual parts that make up the interior



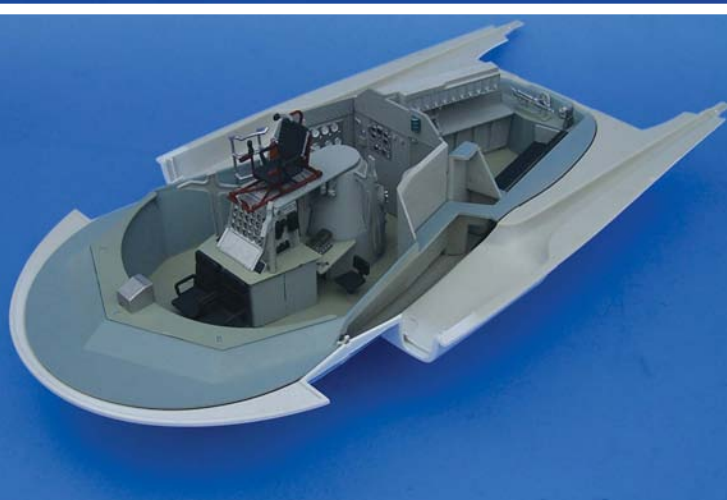
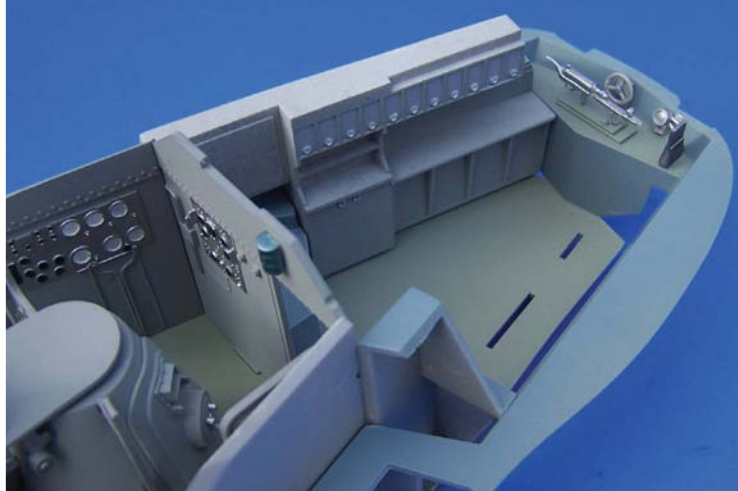
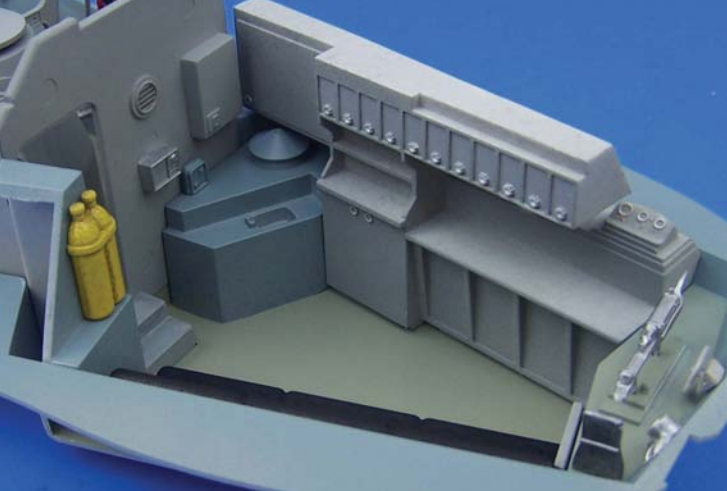
and their respective colours are too numerous to focus on individually, so what follows is more of an overview, drawing attention to anything that is of particular interest and pointing out some conclusions, colour-wise, that I arrived at whilst watching the blu-ray (also see the build images accompanying this article).

Basically, and from front to back, the kit's interior comprises inner cockpit framework with separate closed circuit camera and lower instrument parts, front 'shelf' with separate square centre console, seating (front and side seats, plus, of course, the iconic skipper's control chair that protrudes into the top bubble and is a multi-part affair representing the seat plus its framework, controls and headset with strut) instrument ring for the bubble, central chart storage area with rear workbench, an airlock section, walls with instrumentation, bulkhead with door leading to the aft compartment which features work surfaces, cupboards, a couch and a rear shelf on which is positioned the laser rifle used in the finale to dislodge the blood clot from the patient's brain, plus the test baffle for this weapon. All of these parts, plus further detailing pieces for the interior, go together effortlessly and precisely, with literally

only one or two pieces requiring a light sanding to remove seam lines.

From the footage I was able to discern a predominantly two-colour scheme for the interior basics, this being a light grey for the ship's sides and console walls, interior braces, airlock and chart table (excluding the actual chart holder block, which I painted in polished metal), with a grey-green finish to the floor, all work surfaces and the 'shelf' at the front that sits immediately behind the transparency. These colours, following a priming of all parts with white *Tamiya Fine Surface Primer*, were achieved via sprays from rattle cans of *Tamiya Medium Gray* and *Tamiya Gray-Green (IJN)* (The *Medium Gray* actually proved to be too dark, so I restricted this to the sub's surrounding lower walls, reasoning that these would be in shadow anyway and therefore appear darker.) A lighter *Humbrol* grey was subsequently chosen for the desks, airlock, braces, etc. The single contrasting feature of the grey-green floor is the engraved rectangle that represents the cover to the chamber that houses the ship's nuclear fuel particle, which I picked out with a brush in *MIG Polished Metal*.





#### Interior construction — aspects of particular note:

- The pilot's chair comprises of the main chair, arm rests, the under framework with foot pedals and control bars, headphones support strut, headphones and a lower strut that is designed to connect with the bubble instrument ring once everything is in place. This appeared to be a little short on my test shot and I couldn't therefore, connect its top end to the ring, though I'm sure this will have been produced to correct length in

the production run kit.

- The lower sides of the chart table locker feature hinged door parts which can open to reveal the interior, although once the hull halves are together it will not be possible to reposition these, so a 'pose' needs to be chosen before sealing the ship.
- The door to the rear compartment can be displayed open or closed. If choosing to glue the door shut (it is seen open throughout the film) the modeller has no need to detail the rear



compartment as nothing in that area will be seen.

- On that note, the cupboards to the rear of the door in the aft compartment, plus the detailing on the rear of the bulkhead, can't be seen once everything is in place, so needn't strictly be added or painted. As I knew the rear compartment would only be glimpsed through the open bulkhead door once the hull halves were together I blocked out the colours of the aft compartment detailing rather than going to town on every little feature.

### Hull construction

Prior to joining the hull halves together the interior floor needs to be inserted into the lower half. This is accomplished via several pegs under the floor section that tightly locate into corresponding stubby tubes in the lower hull with hexagonal interior surfaces to grip the pegs. In gently test-fitting the floor I found that it sat slightly too high and so, not wanting to force the pegs into their holes and risk damaging some of the interior detail, I filed down their edges, scalped away some of the hexagonal grip surfaces and superglued the two sections together once I was happy with the fit and the floor's height.

At this point the frosted transparencies needed addressing, and Andy had suggested that *Brasso* brass-polishing wadding was the thing to use, finishing off by buffing with paper kitchen towel, which in itself is slightly abrasive and therefore not recommended for cleaning spectacles (you learn something new every day). The process was highly successful on the dome part, removing most of the frosting. On the window section, however, I was only able to remove seventy percent or so of the effect due to the fact that the part was very delicate and began to crack along its centre line as I

polished it. Thankfully any cracks were covered by the window framing once the piece was in place. I subsequently glued the window transparency in place inside the upper hull and added the inner window framework piece, primed, painted, and with its detail pieces in place.

A decision needs to be made regarding the sequence of painting before joining the two halves together... do you paint the hulls separately, together with the ventral fin and front and rear diving planes, or do you assemble the hull then paint the whole sub, allowing you to fill anything that needs filling once all joins are neat and secure? I chose the former route for two reasons: first, the window section would be particularly challenging to mask if I left the painting until after the hulls had been assembled and, secondly, the join line of the hull halves along the edge of the sub has helpfully been craftily designed with a rounded 'lip' all round its top edge, so that the join line of the hull halves is *under* the craft and behind the lip rather than along its edge, eliminating the need to fill and respray any seams on the actual edge and any edge to edge gluing that would be difficult to accomplish neatly.

Having chosen my painting option I therefore primed the hull halves, diving planes and fin, plus the bubble cowl and lower inner bubble ring (the part that attaches to the top of the sub, and over which fits the transparent dome's 'lighting ring' edge) with *Tamiya Fine Surface Primer* before carefully spraying the sub's exterior with *Humbrol Gloss White* from a rattle can (actually *two* were needed – there's quite a lot of surface area to cover). I then glued the rear diving plane bar in position via the two tabs on its front face, tacked the front planes in position against the top hull



with masking tape (these swivel via a central peg, and needed to be held in place until I'd joined the hulls to trap the pegs between them) then ran liquid poly around the top hull just inside the side lip and joined the hull halves together, holding everything in place with strips of masking tape until the assembly had set.

Removing the masking tape I discovered that the front and back of the sub had gone together perfectly but that, unfortunately, there were gaps in the join areas behind the front diving planes. With hindsight, and if building a further example, I would pay particular attention to this area when joining the hull pieces, temporarily positioning the diving planes vertically when gluing the hull halves

tweaking with files and sandpaper to conform more closely to the contours it sits against. Mostly this involved thinning down the tabs on the fin piece so that they fitted more snugly into the slots in the body. Some slight touching up of any inadvertently rubbed back paintwork areas on the fin was then carried out using the white paint and a brush.

Having already sprayed the front intake backing piece in a mid grey and glued it in place before I assembled the top and bottom hull, with the sub together I now carefully picked out the struts of the front grill in a light grey with a brush. Top and bottom hatches with their central locking wheels added, having been primed and sprayed gloss



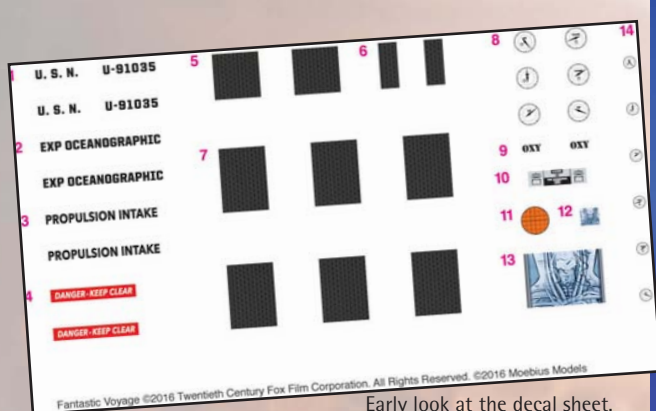
so that I could clamp or otherwise bring the areas behind them together so that gaps wouldn't result. Initially I couldn't think of any way to fill these holes that wouldn't cause damage to the surrounding paintwork... but I eventually decided on strips of adhesive paper label cut and laid across the gaps then blended into the surrounding paintwork using *Humbrol* white and a brush. As these areas sit behind the planes when in their horizontal position the strips are hardly noticeable, and are extremely hard to detect when the planes are angled too.

The fit of the ventral fin against the body (this pushes into the body via three locating slots in the upper and lower hulls) also required some fine

yellow, were next glued in place. The oxygen sucky-thingy was painted red with a brush, glued within the receptacle behind the top hatch and the transparent collar piece push-fitted into position around it.

### Stand

As stated earlier, the stand pieces were supplied on the transparent parts sprue, and look good as they are, making the sub appear to be sailing through (inner) space. I, however, wanted to mimic the look of the full-size prop's stand pieces seen on screen, so, following a priming, these parts were sprayed with *Humbrol Matt Black*. I then tracked down a trusty wooden cutting board I had stowed away for



Early look at the decal sheet.

just such an occasion, stood the stand pieces on top of it, sat the sub on top of them and adjusted them until they were in the right position, then marked their relative positions on the board and centralised them, gluing them in position with two-part epoxy. Once set, I sprayed board and stand pieces with a unifying coat of *Citadel Purity Seal*. The *Proteus* was positioned on its stand (not glued in place) and the build was complete.

### Conclusions

This is one beautiful and highly desirable kit – crisp parts, superb detail and a satisfying scale (around fifteen inches long). My one regret is that much of that glorious interior detailing is obscured once the hulls are brought together (this being the case particularly with my build due to the test-shot frosted windows).

Visual access to the aft section could be fairly easily gained by cutting away, at the back of the hull, the ‘shuttered’ sections to either side of the ventral fin and replacing these with window transparencies. Many modellers are going to want to light their *Proteus* too, a step that would certainly show off much more of the interior detail, and I don’t need a crystal ball to predict that a dedicated aftermarket kit for this very purpose is sure to be made available in the not too distant future.

Finally, the aforementioned figure set will also do much to further enhance this subject, as will the super-detailing set by *ParaGrafix* detailed in our boxout.

One word verdict? *Fabulous!*



### ParaGrafix aftermarket photo-etch brass set for the Proteus

Still in its early stages at time of going to press, *ParaGrafix* inform us that the set is likely to include:

- Lightable control panels for all stations.
- Airlock door rails.
- Lighting ring (and light masks) for the exterior of the pilot bubble.
- Rear window frames enabling modellers to open these up to allow visual access into the laboratory.
- Individual rudder vanes that can be posed in directions other than ‘dead ahead’. (These would not be movable, just static.)
- Laboratory storage lockers.
- Cutting templates for the exterior foot wells.
- Underside ballast tank vents.
- Interior air vents.
- The step at the bottom of the interior ladder.
- A replacement chart case front, or possibly a replacement for the entire case.





# Ground Force

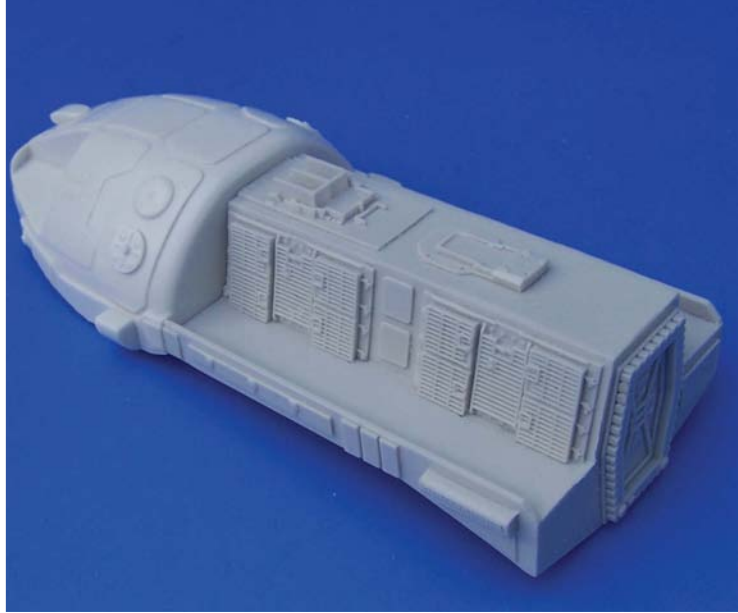
## Alpha mobilises its land vehicles and Mike Reccia builds UNCL's Space:1999 Type 1 Laser Tank

APPEARING FOR MERE MOMENTS IN THE FIRST SEASON *SPACE: 1999* EPISODE *THE INFERNAL MACHINE*, *MOONBASE ALPHA*'S THREE LASER TANKS HAVE PROVED TO BE FIRM FAVOURITES with the SF modelling community since their first ill-fated outing in 1974. I think it's fair to say that, of the trio, the lunar vehicle that attracts the most attention is the 'Type 1' – as *UNCL* have designated it – this being the variant with the *Eagle*-beak-like cockpit.

This new resin kit is to 1/48 scale and with its *UNCL* pedigree there's no need to query the quality of the product. Castings are crisp and clean, with only a little flash needing to be cleared from around the most delicate pieces and with a couple of pour 'lugs' requiring removal with a razor-saw and sandpaper from the chassis underside. Assembly is simple and considered,

and, as with all *UNCL* kits, detailing is faithful to the original. In addition to the resin parts the release also includes a brass photo-etch sprue from which to recreate front and rear frameworks for the radar dish and certain other intricate surface detail pieces, plus a small sheet of plastic card from which a panel needs to be cut that locates to the rear right of the body, and a comprehensive waterslide decal sheet. This latter item is computer printed as stated in the instructions (of which there are three A4 pages, illustrated throughout with colour photographs showing most assembly steps, together with a CD allowing you to study these shots on your computer) but produced to professional standards with sharp, bright images.

Construction began by treating all components to a wipe of methylated spirit to remove any lingering mould release agent, although all parts seemed perfectly clean and clear of such a potential threat to primer and paintwork. This done, I then, having carefully removed the two delicate drive sprockets from the thin resin that surrounds them, which also needed filing away from between their teeth before they could be



glued in place, fixed the sprockets to the static, one-piece track and wheel sections (you wouldn't expect a resin kit at this scale to feature functional wheels and tracks with their complex linkages, etc.). The track/wheel assemblies were then located to either side of the chassis, the backs of the wheels connecting with protrusions on the lower sides of the piece. At this point it is advisable to paint the sub-assembly as this would prove difficult to accomplish effectively, particularly with regard to the tracks, at a later stage in the build. I therefore coated the chassis/wheel/track section in *Tamiya Fine Surface Primer (White)* then sprayed on a couple of thorough top coats of *Humbrol Matt White* from a rattle can. Once dry, the tracks were picked out in a *Vallejo Light Grey* (referring to behind the scenes shots of the actual studio miniature these appear to actually be a darker silver-grey – possibly being the unpainted plastic surfaces of the track sections from the tank kit – a 1/25 scale *Tamiya Chieftain* – used as a basis for the *Alpha* tanks... but on screen they appear much lighter due to strong studio lighting and I kinda like this on-screen look and wanted to reproduce it in my build).

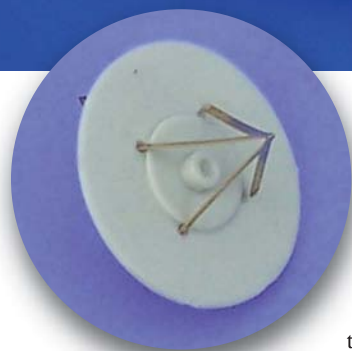
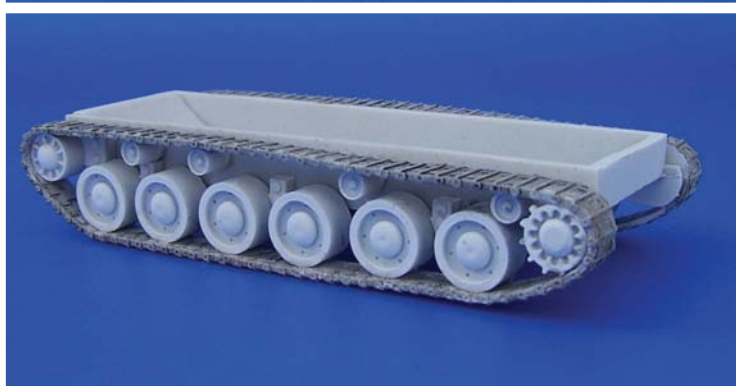
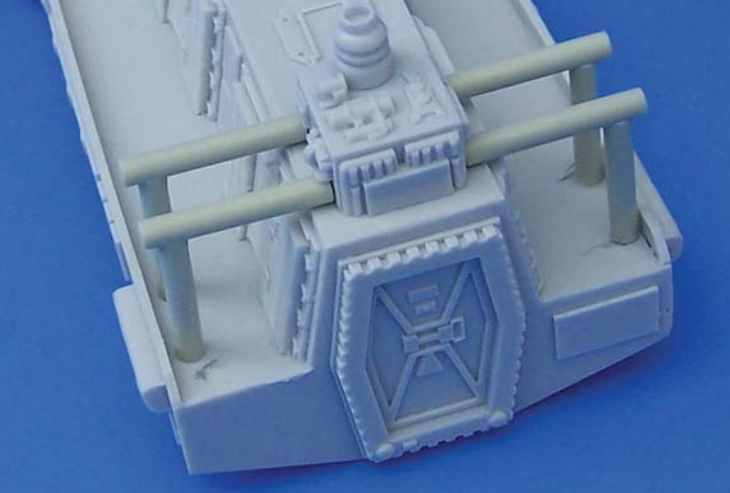
Setting aside this section to dry I turned my

attention to the radar dish, removing the etched brass pieces from their sprue with a sharp scalpel blade against a cutting mat. The cross section for the rear of the dish was then folded as indicated in the instructions and glued to the back of the resin dish part.

The instructions recommend epoxy for a strong bond here, but I found the brass pieces too small to allow for a sufficient bond area without the most frugal applications of epoxy forming an unsightly blob. I therefore used superglue, reinforcing the join areas with a further application of the glue once the initial one was dry. The thinner 'X' section was then cut out, folded and superglued into the four depressions to the front of the dish. Once everything was dry the rear resin detail piece was glued to the dish's brass framework and the dish post, comprised of two resin parts, had a hole twist-drilled into its top to accept a small length of wire. A similar hole was drilled into the resin part at the back of the dish, a suitable length snipped from a piece of stiff wire and the two sections superglued together with the wire connector locating into the two holes to hold







the assembly securely (the dish being set at an angle to the body as seen in footage from the episode).

After gluing the 'beak' to the rear body section (a little underside filling and filing was necessary here to even up the underside join) It was time to add detailing to the upper body, this comprising of the L-shaped piping sections that slot into holes to the rear of the body, two to each side; the gun rest that locates centre top; a piece featuring two small linked circles that glues to the left hand cabin wall to the rear of the window opening and a couple of tank supports plus the cylindrical tank that rests on them that sit on the indented section behind the cab to the left of the vehicle. A smaller tank and a detail piece were added to the rear left of the body, and a second large cylindrical tank plus delicate supporting frame section was positioned on the body's right side. Finally, the radar dish assembly was added to the right hand side of the vehicle behind the cab.

The gun assembles from main barrel and rear pieces plus a U-shaped gun mount, and if the

modeller desires, the gun and mount can be drilled through, threading a small length of wire through the pieces to articulate the weapon and allow it to elevate. As in its rest position it droops down below the horizontal against its front strut (a feature faithfully copied from the studio original) I decided to fix mine in a static, slightly elevated pose as though about to fire at the Infernal Machine of the episode's title – the sinister *Gwent*.

### Painting and decals

The detailed top section could now be painted. The three *Alpha* tanks were basically white overall, lightly weathered but featuring mid-grey panels of various shapes and sizes all over the body and chassis. These are tiny at this scale, and one can see on the original that they have been hastily painted on to meet deadlines and also, I suspect, because the tanks were only featured briefly on screen. I wanted a neater appearance for my replica, and so recreated the grey panels, referring to shots of the original for their location and size, as a combination of adhesive paper labels primed then painted grey, scalpelled to size and stuck on, and also as brush painted examples where the curvature of the vehicle made

application of paper labels difficult. The grey and red banding around the L-shaped pipe sections to the rear was also created from a combination of painted adhesive paper labels and adhesive, self-coloured vinyl strip.

The anti-glare panels to the front of the windows were now carefully masked off and sprayed with *Humbrol Matt Black*. The windows themselves have also been painted in matt black in the shots shown in the instructions – and, don't get me wrong, they look good in this colour – but, as the original miniature featured transparent windows, I felt a dark grey would more accurately mimic the look of 'glass' and so brush painted these areas with an appropriate grey acrylic. At this stage the waterslide decals, which need to be cut from their sheet individually, were applied to the appropriate areas and allowed to dry.

### Finishing touches

I brush-applied a little grey dry pigment weathering powder to the tank's wheels and tracks to represent lunar dust that had been kicked up by the vehicle, added orange accents where indicated in the instructions with a brush, then glued top and bottom sections together and fixed the gun and gun mount in place, having first detailed this with bands made from the adhesive labels and vinyl strips. The completed tank was then given a couple of coats of *Citadel Satin Purity Seal* to tie everything together and give a uniform finish. And that was that – one lunar tank ready for action!

### Verdict

A classic subject, painstakingly and accurately reproduced with a wealth of detail in resin and brass by UNCL. ...A little bird tells me that UNCL are likely to release the remaining two tanks sometime in 2017. I, for one, can't wait.

*Review kit kindly supplied by  
Timeless Hobbies.*

*Kit available from Timeless Hobbies –  
[www.timeless-hobbies.com](http://www.timeless-hobbies.com)*







# EXCELLENCE PERSONIFIED

Building Round 2's 1/1000th Excelsior

Article and Images by Gary R. Welsh

RUMBLINGS DURING APRIL, 2015 LED MANY OF US TO BELIEVE THAT ROUND 2 WERE LOOKING TO REISSUE ONE OF THE FINEST AMT STAR TREK KITS ever to hit the shelves. Thankfully these were not just rumours and a test shot arrived in the latter weeks of August, 2016 just begging to be reviewed by yours truly...

OK – so what's the score, Mr. Welsh?

AMT's kit was widely applauded when it was first released back in 1994. Well designed and way better than either the *Tsukuda* or *Lunar Models* offerings (even though both of these were bigger), the AMT kit was mastered as she appeared in *Star Trek VI: The Undiscovered Country*.

When the *USS Enterprise-B* kit was also released in the same year (to tie in with *Star Trek VII: Generations*), it was widely believed that the moulds for the original *Excelsior* kit had been amended and this was therefore the reason this kit has not been available for such a long while. However, digging into the Welsh

insulation (that would be my loft full of kits and catalogues) I found I had two versions of the original *Excelsior* still in their boxes. One was produced in the USA (marked 1994), with a cracking set of decals from *Scalemaster*. The other, marked as being manufactured in Mexico (1996), is a far inferior moulding. This only comes to light when you try to build it – the fit of parts is absolutely appalling, as well as possessing a woefully produced set of decals.

So, what is the truth?

Well, one thing I would say is that my contemporary AMT/Ertl catalogues for 1995/6 have both *Excelsior* and *Enterprise-B* kits included in them (if the moulds were amended, how could both kits be available at the same time?), with the *Enterprise-B* kit being delisted in 1999; although the *Excelsior* kit remains as listed. Also, the Frankenfleet produced for seasons 5/6/7 of *Deep Space Nine* makes extensive use of the original *Excelsior* kit and this is four years after the kit was supposedly lost forever.

My personal opinion is that the moulds were damaged while moving them from Mexico to a

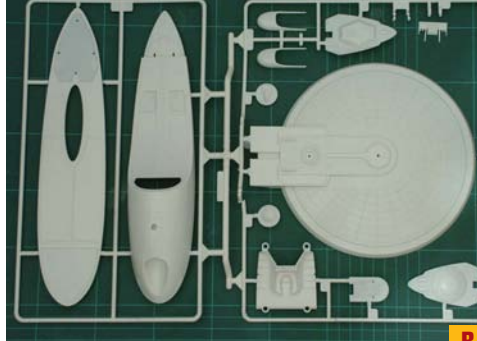
new production facility in China, and in such a way that this kit has been unable to be reissued without the moulds being completely retooled and this is why it has not been reissued – until now. Either way it's back, so lets get on with it...

The seven and a half foot *Excelsior* miniature was designed by Bill George, who took the radical approach that *Excelsior* was the *Enterprise*, but as designed by 1980s' Japanese industrial designers. Once the design was chosen by director Leonard Nimoy a 7.5 foot model was constructed under the supervision of Steve Gawley at ILM for *Star Trek III* back in 1983.

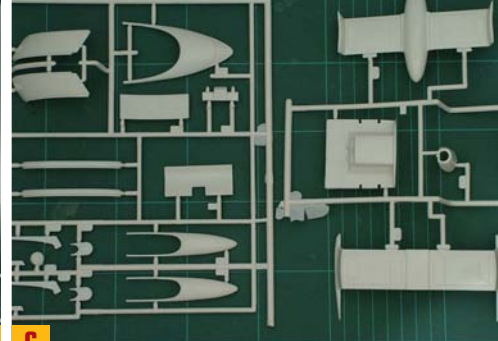
In 1987 it was refurbished and redressed as the *USS Hood* for the pilot episode of *Star Trek: The Next Generation*. In fact, footage of this version was used throughout seasons 1 to 7 whenever an *Excelsior* class ship was called for. As television of the day did not have the resolution to pick up individual registries and names, this was a simple and inexpensive way of using stock footage shot by ILM, although she was redressed again as the *USS Repulse* for the



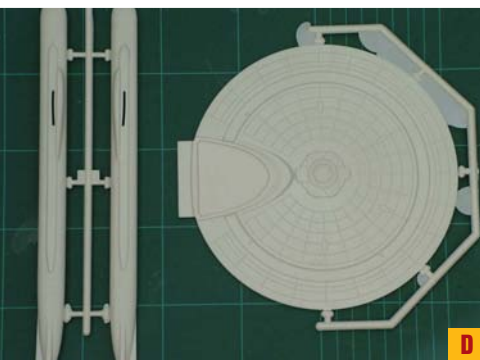
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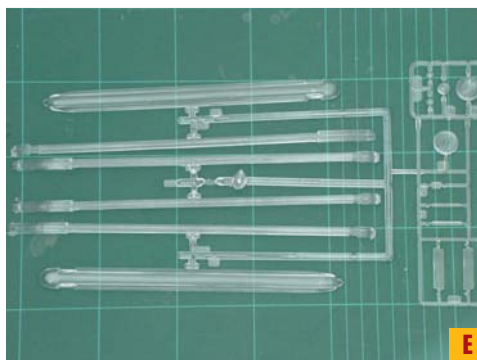
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**C**



**D**



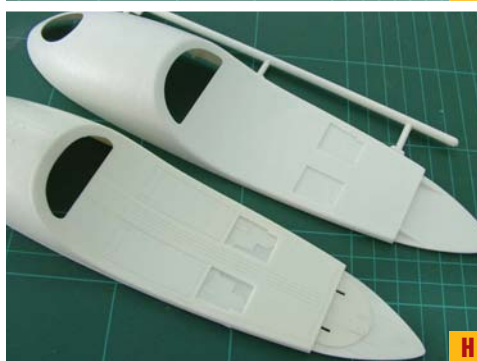
**E**



**F**



**G**



**H**



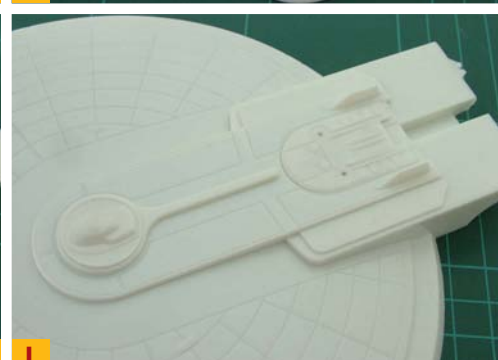
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**J**



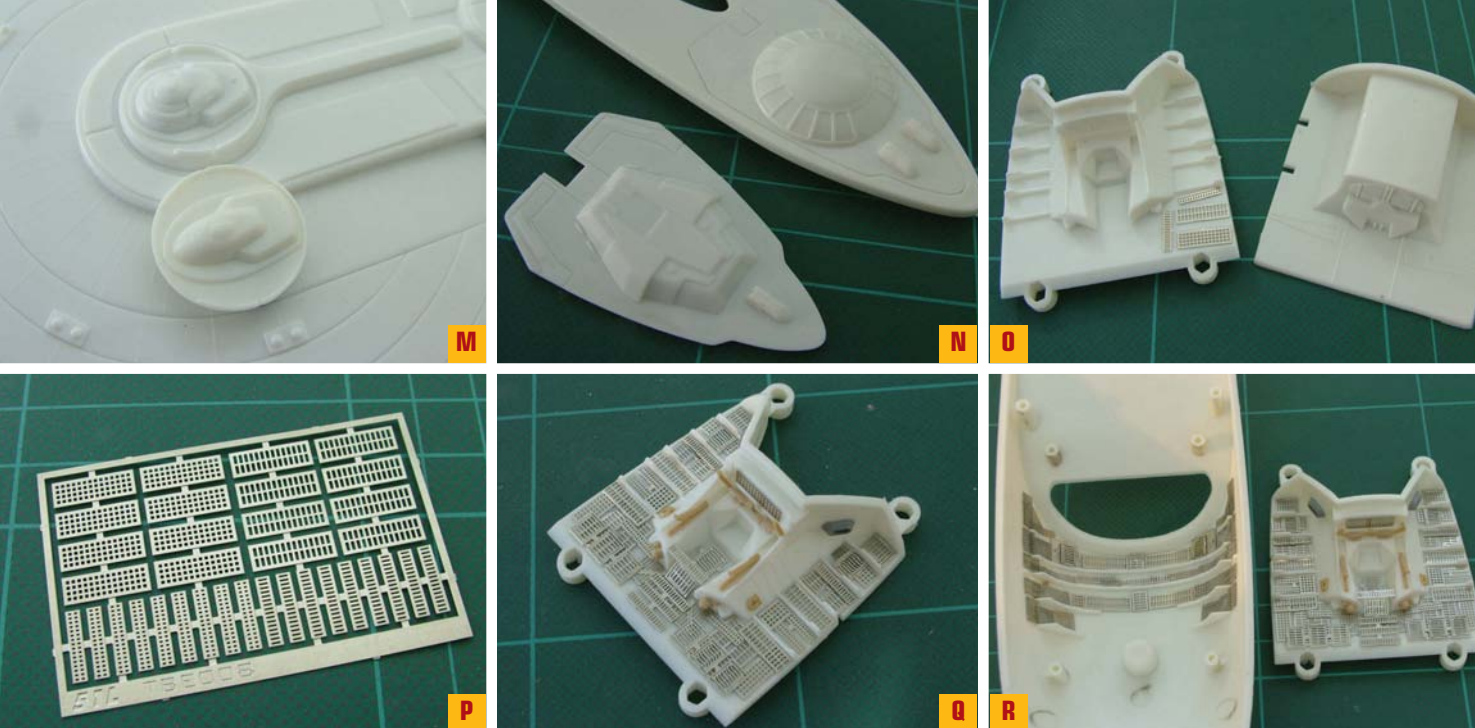
**K**



**L**

A: An original AMT/Ertl *Excelsior* kit. I built this so I could show the differences between the ILM built 7.5ft *Excelsior* miniature and the Greg Jein built 4ft version and CGI *Excelsior* – otherwise the new kit makes this one redundant. B: The new tree that replaces the original lost tree. The detail is wonderful. C: A standard *Enterprise-B* tree with very slight modifications. D: The warp nacelles are as per the original release (carried over from the *Enterprise-B* kit). The lower saucer part is all new and very accurate – the flash present is due to the part being a test shot. E: The clear tree has been modified so that it now encompasses both *Excelsior* and *Enterprise-B* parts. F: Close-up of the new clear part. Two styles of deflector dish are included as well as impulse crystals for both *NX* and *NCC* versions. G: Original AMT kit part and new part side by side. The improvement over the original (top of the image), is obvious and shows up the very poor accuracy and detailing of the original. H: Lower secondary hull parts. The lower part is from the new kit and reveals the crudeness and lack of detail in the original part (above). I: Close-up of the lower secondary hull parts. The clever moulding of the new part complete with moulded-in deflector bay is a real improvement over the original AMT kit. This shot also shows the incorrect width of the original AMT part. J: Apart from the shocking sprue attachments on the AMT part (in the lower part of the frame), in terms of accuracy the part is very much 'of its day'. In shape and detail the new part is far superior. K: The new saucer variant one (*NX-2000*). With the original bridge part added, the rear impulse section is as moulded. L: The new saucer variant two (*NCC-2000*). Revised bridge and rear impulse section, that drops onto the impulse section as moulded, resulting in a seamless join. A very clever piece of design and moulding.





M: The newly moulded bridge section against its moulded on cousin as featured on the original release. In shape and detail the new part is far superior in terms of accuracy. N: Another very clever piece of design. The rear shuttle bay detail is moulded as a drop-in part. Note the tiny shuttles on each of the parts (2 on the officers' lounge and 1 on the latter bay). Unfortunately decals are not supplied for either and unless you open the shuttle bay door they are invisible on the finished model. But it is nice to know they are there! O: Secondary hull shuttle/sensor bay detail. On the right is the part from the original kit. Again the part on the left is from the new kit and is so much better. Although there is room for improvement as the characteristic fret work (on the *ILM* miniature) is not represented. Note the *Wizard* etched parts set out for placement only at this stage. P: The *Wizard Models* etched fret. This will do until *ParaGrafix* give us one of their wonderful etched sets. Q: Secondary shuttle/sensor bay detailed ready for paint. A handful of kit parts finish the area off nicely. R: Secondary shuttle/sensor bay complete. Note the etched parts also added to the secondary hull.

second season opener *The Child*, where further shots were required not in the *ILM* stock.

She was then redressed again for her third big screen outing in **Star Trek VI** as the *USS Excelsior*, with the addition of double impulse drives, removal of the so-called officers' lounge on the secondary hull and a new bridge, with a further redress for **Star Trek VII**. The modifications this time, however (addition of secondary hull fairings, saucer impulse engines, warp engine fairings and further amendments to the top of the saucer), made sure that the miniature could not be redressed back to her original form. This redress also meant that when producers needed the *Excelsior* for the *Voyager* episode *Flashback* a new miniature had to be constructed by Greg Jein (this time being 4 feet long, so easier to handle and with less light leakage issues

than its 7.5ft predecessor, that spent most of its time during its lighting passes on the model stand covered in black electrical tape) and I think this is where the confusion regarding the *AMT/Ertl* kit may have come from. It was this model that was also used to generate the CGI models used for *Deep Space Nine* and *Voyager*.

Anyway, on to *AMT's* reissue. Moulded in the usual translucent white plastic for ease of lighting (the original version of this kit is moulded in solid white plastic), the parts are clean and free from flash or sink marks.

Close examination reveals that there are many parts that are retained from the *Enterprise-B* model (with minor adjustments, such as the rear neck bulkhead), along with a new sprue containing parts that give the modeller the ability to make 'any' *Excelsior* class ship seen in

the **Star Trek** franchise.

I'm going to build an original release *Excelsior* kit alongside the test shot, as I wanted to build the test shot as the *Excelsior* was first seen in **Star Trek III**, but thought it would be good to also show the *Excelsior* as seen in *Voyager* and *DS9* so you can appreciate the differences in finish between each variant that can be modelled from our test shot.

Having built a few of these kits before, instructions were not needed (good job as well, as none were supplied). The fit of all the parts is pretty good, with the exception of where the upper and lower hull halves meet the lower impulse deck and the area where the pylons meet the secondary hull, which on both kits is horrible.

There is no point in running through the construction of the standard kit, as most of you will

have at least built one example or know someone who has.

So, this kit was built as per the instructions with only a bit of kitbashed detail added to the lower sensor bay and neck torpedo tubes, as well as the warp nacelle governors, that were added as simple round disks. So, let's concentrate on the uprated new release which, let's face it, is what you really want to see.

Construction of our test shot began by building the parts up in readiness for painting. First the trees were cleaned of any residual release agent before all the parts were removed from them and cleaned up. This was only pertinent for the existing parts, however, as all the new parts were excellently moulded with no sink/ejector pin marks or flash present.

The saucer parts were mated together and here the rear lower

impulse bulkhead was a very poor fit that needed some *plasticard* shims and filler to make good. The upper saucer has alternative parts for single or double impulse crystals. As I was building *NX-2000* I left the double impulse parts off.

On to the secondary hull. The deflector bulkhead is moulded into the hull and not as a separate item as per the original release. This is a superb upgrade that really helps the overall shape of the secondary hull, as well as negating the poor fit of the original.

The rear shuttle bay part (I used the so-called officers' lounge for *NX-2000*) was left off, to be added at the final stages of construction. The new sensor/secondary shuttle bay is excellent in detail and a very positive fit which means you can paint it and then leave it aside

until final construction.

I, however, decided to detail the area further using 'O' gauge etched drain covers from *Wizard Models* (to simulate the missing etched detail on the original miniature – parts left over from the **Return of the Jedi** *Death Star* build) and a few carefully chosen kit parts. This is the only area of the kit really crying out for photo-etched detail (*ParaGrafix* take note).

Finally for the secondary hull, the rear photon torpedo tubes are constructed. These are now a three part affair and a massive improvement on the original part which perfectly match the original miniature *Thor/Karl* kitbashed parts. Once again these were left off until final construction.

The neck and warp grills were built up next. The neck has a new rear bulkhead part that

S: Test fitting, the standard part is a huge improvement over the original *AMT* kit. But these additions just add icing to an exceedingly good cake!  
T: The torpedo tube barrels are moulded separately and care must be taken not to obliterate all that lovely detail. U: Warp governors for each variant. The part at the top of the image is used for any 7.5ft *Excelsior*, whereas the bottom part is pertinent for the 4ft and CGI versions. V: Two *plasticard* shims and a touch of filler – job done! W: Added kitbashed details applied to the original *AMT* kit parts. X: Painting the saucer top deck part one. After a painful session of very careful masking the first colour is ready to be added over the base colour.



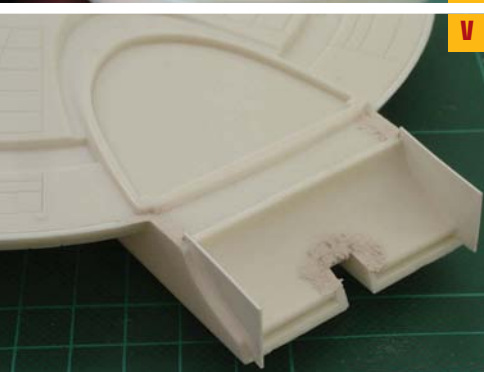
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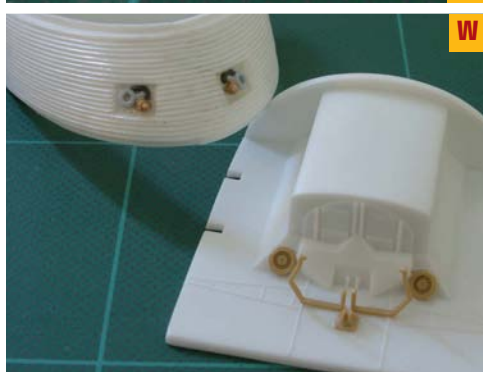
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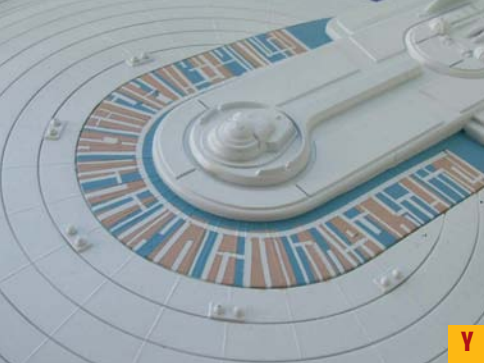


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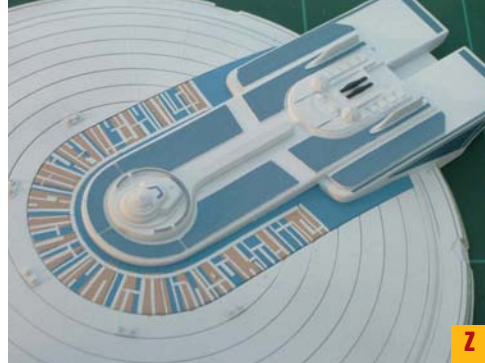


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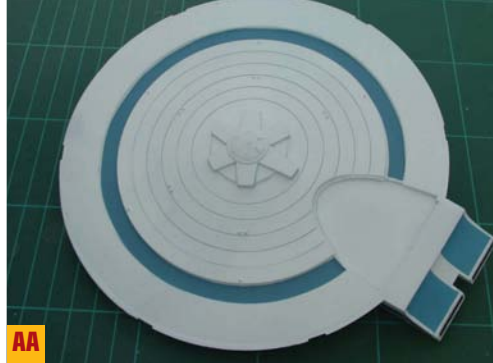




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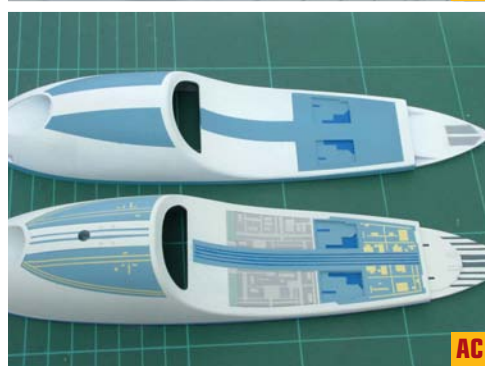
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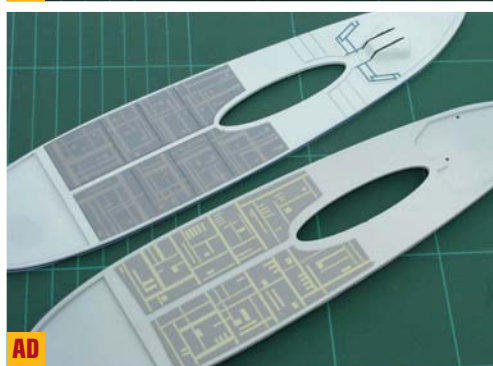
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AC



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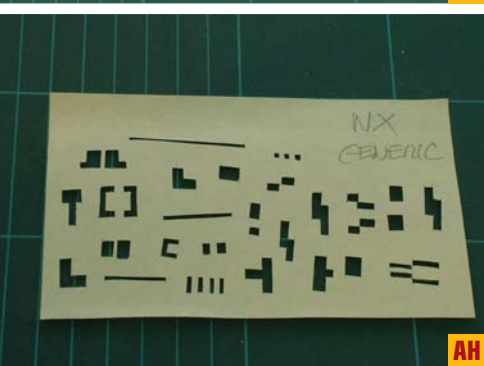
AE



AF



AG



AH



AI



AJ

Y: Once all the masking is removed this is the finished result. The pattern here is for the 4ft/CGI *Excelsior*. This image represents a whole day's work. Z: The completed saucer for the original kit. Another day's work. AA: By contrast the scheme for the 4ft/CGI version is much more simple. AB: Another session of careful masking required for the warp pylons and nacelles on both kits. AC: The secondary hulls side by side. The lower hull in the image is the new kit part. Although the paint scheme is far more complex, masking the main areas is easier due to the excellent engraved panel line detail. AD: Secondary hull top parts. The bottom hull section has more accurate shape and lacks the heavy panel lines of the original AMT kit parts. The bottom section has an accurate panel pattern that will be shaded over with light coats of airbrushed grey to soften the effect. AE: This image shows the difference in the warp engine detail of each version. The top parts are painted as per the 4ft/CGI version. Note the 3 colour top parts on top of black grills. White top edges will be added to these. The bottom parts are painted as per the 7.5ft *ILM* miniature. The grills are painted on the top edge with white grey and misted with smoke. Notice the three different colours on the top parts. AF: In order to create the various aztec patterns required I placed the *Post-it* note over the forward part of the saucer and ran a nail down the forward saucer panel lines to give me a clear image to work from. AG: Four sheets were required for the 4ft/CGI version. Saucer top/bottom, a bespoke sheet for the rest of the model and a generic sheet (used for both versions). AH: The generic sheet used across the rest of the 7.5ft version model. AI & AJ: Aztec pattern applied to the top and bottom of the new kit dish. By using the templates and 3 differing colours a really convincing effect can be achieved.

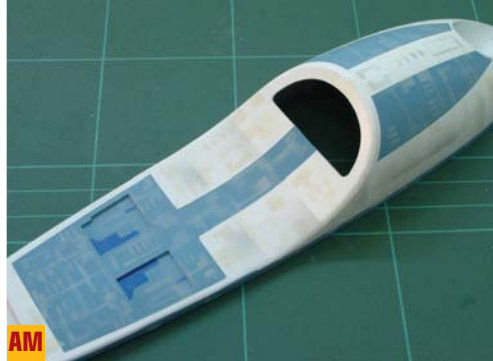




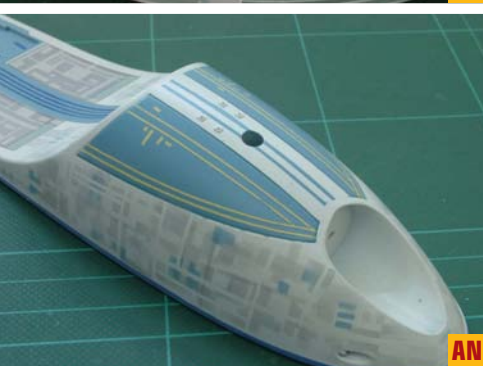
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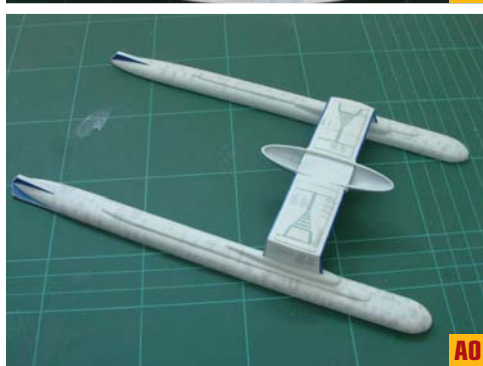
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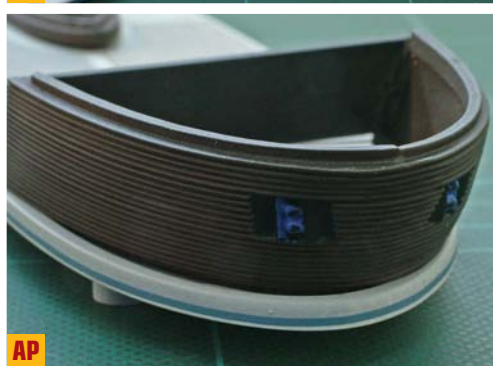
AM



AN



AO



AP



AQ



AR



AS



AT



AU



AV

AK: On the original AMT kit a single colour and some simple shading create an effect very close to the original 4ft miniature. AL: Underside of the AMT kit saucer. Note the shading in the recess, more simplified than the 7.5ft ILM miniature. AM: Detail on the underside of the AMT secondary hull - two primary colours and some simple patterns created with the Post-it note templates. Keep the paint thin, pressure high and template fairly loose, to create this effect. AN: In contrast to the 4ft version the new kit requires multiple passes with three shades of colour and some very careful masking with minute pieces of cut tape. AO: Panelling on the warp nacelles is done using the saucer templates and two shades of colour. For the 4ft version it is a single colour. AP: For the NX version a mix of smoke and metallic is carefully applied via an airbrush. AQ: Close-up of the officers' lounge part used for the NX variant, with the rear shuttle bay doors closed. However, most of this will be invisible - but hey, I know it's there. AR: An alternative flat dish part is included as the decals have some deflector detail. I, however, chose to paint mine (mainly as I didn't have any decals). On the left is the deflector for the NX 7.5ft version, with 4ft NCC on the right. Note the different colours used. AS: Another close-up - this time with the impulse crystal and bridge module in place. AT: Close-up of the sensor area on the underside of the saucer. This required some very careful painting. AU: Building up the secondary hull on the Round 2 kit. Look at the lovely shuttle area. AV: The completed models side by side after 200 hours of work. On the right is the new kit, its accuracy and ease of build means the model on the left can only really now be considered a collector's piece.





The NX-2000 underside.

really helps the final fit of saucer to secondary hull. The warp grills and secondary hull warp nacelle support neck were built up as per the *Enterprise-B*. The warp pylons are as per the *Enterprise-B* kit and the fit is OK but needs some remedial filler and work to get it looking perfect when the support neck is finally in place.

Any remedial work was now done on all the parts for both kits (nothing major to report here) before all parts (excepting the deflector and impulse parts) were primed with *Alclad 2 Matt Black Primer* and *Micro Filler* in readiness for paint.

As I now had two *Excelsiors* (or should that be *Excelsii*?) sitting in bits on the bench. I started looking at the colour schemes for each. Two versions are offered on the kit decal sheet for either *NX* or *NCC-2000*, although the decals cover only the 7.5ft miniature.

There is an additional decal set including aztec detail, that covers 'all' configurations of the aforementioned 7.5ft miniature. However, one option on this sheet (*USS Valley Forge*), is a CGI model based on the 4ft miniature built by Greg Jein. Although the bridge pattern is supplied for this and the CGI versions, unfortunately the indicative 'chain' aztec pattern as seen in the series is not covered in this sheet – instead the pattern

seems to be based on the uprated CGI version built for the *Eaglemoss* starship series (although I may be wrong here). As I had no decal sheets (mine would come from spare original *Excelsior* kits, with various bits pulled from *Enterprise-B*, *Enterprise-A* sheets and custom sheets) I decided that our review sample would represent *NX-2000*, as per the 7.5 footer, and the original AMT kit would represent the 4ft/CGI version complete with chain aztec.

First off I had to understand the differences between both versions. The 4ft was no problem as there are some really good images available on the web and I had a ton of shots I had taken from when this miniature was on display at *Star Trek the Experience*. The 7.5ft model was a different prospect... after an age on the web and trawling through my reference I finally managed to gather just enough to get me by.

The base colours for each vary in tone, with the 4ft being a shade lighter than its bigger brother. Each base colour was hand-mixed using *Liquitex White/Neutral Grey* in readiness for the detail paint. The 4ft miniature's detail paint is based on two shades of blue and a shade of grey, after which *Post-it* note panelling was added via an airbrush. The area around the bridge is more white and tan. In

contrast the 7.5ft miniature is very carefully painted with many shades of blue and grey, giving the model a more subdued finish and a subsequently larger sense of scale (as it was built for film and as a smaller model than the hero *Enterprise*, even though it was supposed to be twice the size).

The decal sheet that comes with the kit has virtually everything you need to make the model look great, with the exception of the aztec pattern, so you will not have to go through the pain (and I mean PAIN!), of hours and hours of endless masking with teeny-tiny pieces of cut masking tape.

How long? ...well, to mask off, spray, hand-paint and add pre-cut, pre-painted tape lines on *NX-2000* equalled nearly forty hours of painstaking, eye-aching work. I'll leave the pictures to do the talking, but this was without doubt one of the longest but most satisfying builds I have ever done for this publication.

Aztec patterns were cut into large *Post-it* notes, three for each side of the saucer for *NX*, as well as a sheet of generic *NX* patterns and a sheet of *Starfleet* generic patterns to be used on both models. The chain aztec masks for *NCC* only required a top and bottom mask. So – that's a whole day of cutting eleven masks in total and then another day applying these patterns to each model with four different colours via some careful airbrushing. Once all this was done the parts were all sealed with *Klear* in readiness for the decals.

Nothing to say here. The decals went on fine and even if they hadn't there's not much point in talking about it as they are not going to be included in the kit you will be buying. What I would say is that, looking at the sheets as designed (via the



The completed test shot as the NX-2000.



artwork sent to us) they are going to make my ham-fisted masking and painting look a bit rubbish...

With all the decals sealed in with matt varnish, final painting was now completed. The metallic areas around the bridge, deflector and lower neck were picked out using *Humbrol* enamels. The clear parts (with the exception of the deflector – see photos) were painted on the reverse side in readiness for final construction.

All the parts for each model were now glued together – a painless operation on our test shot. Less so on our original build. The new kit really does almost clip together with a lot of the location points on the standard parts being beefed up, whereas the original build is a bit hazy in places, requiring care. I then set both models aside for final photography and compositing – complete. Total hours two hundred-plus... and I loved every minute of it!

And the thunderous applause dies down after a long time...

Well done, *Round 2*, this kit is excellent to the point where, unless you are a collector, or want to build the Frankenfleet, the original kit is now superfluous and I feel honoured to have been given a test-shot for advanced review.

Giving the modeller the ability to build any of the four *Excelsior* versions in one box is fantastic. I can't fault this kit and would go as far as to say that this is probably the best 1/1000th scale *Star Trek* kit released in the last twenty years. Thank you, Jamie Hood and team for producing such a brilliant model. Go and buy, build, then buy again. I'll be stocking up, that's for sure! A must-have kit for the *Star Trek* modeller; very, *very* highly recommended to *any* modeller.

Who knows what wonders we will see from Jamie and his team in 2017?

My grateful thanks for our review sample. Also thanks to Dale Futter for finding me an original AMT kit so I didn't have to break into my Frankenfleet stock.

## Postscript

OK, so you have your model. Now let's clear up what's needed where for *Excelsior* class ships seen in the movies, TNG, DS9 and Voyager.

Lets break them down as follows...

**7.5 Foot Miniature Original Configuration:** Large bridge, single impulse deck (as moulded) and round secondary shuttle bay (or officers' lounge). The model is also painted with original subdued random aztec pattern. This was added to for **Star Trek IV** with additional blue areas on the lower secondary hull and lower saucer recess. This miniature was only redressed with two differing registries (*USS Hood/Repulse*).

**Excelsior NX-2000 (Star Trek III: The Search for Spock and Star Trek IV: The Voyage Home).**

**USS Hood NCC-2541 (Star Trek: The Next Generation Encounter at Farpoint).**

**USS. Repulse NCC-2544 (TNG, The Child).**

**USS Fearless NCC-14598 (TNG, Where No One Has Gone Before).**

**USS Cairo NCC-42136 (TNG, Chain of Command).**

**USS Gorkon NCC-40512 (TNG, Descent).**

**USS Crazy Horse NCC-50446 (TNG, Pegasus).**

**7.5ft Miniature, Refitted Configuration:** small bridge, double impulse deck and rectangular secondary shuttle bay. The model is also painted with original subdued aztec pattern as per the redressed *Excelsior*.

**USS Excelsior NCC-2000 (Star Trek VI: The Undiscovered Country).**

**USS Melbourne NCC-62043 (Star Trek: Deep Space Nine, Emissary – originally seen in TNG Best of Both Worlds as a Nebula class).**

**4ft Miniature:** small bridge, double impulse deck and rectangular secondary shuttle bay... leave off the upper warp nacelle detail parts and replace with round, flat parts. The model is painted with chain-style aztec pattern with graphite brushed neck.

**USS Excelsior NCC-2000 (Star Trek Voyager, Flashback).**

**USS Farragut NCC-2582 (DS9, Chrysalis).**

**USS Malinche NCC-38997 (DS9, For the Uniform).**

**USS Fredrickson NCC-42111 (DS9, A Time to Stand).**

**CGI Model based on the 4ft Miniature** (many are seen but only a couple were named): small bridge, double impulse deck and rectangular secondary shuttle bay – leave off the upper warp nacelle detail parts and replace with round, flat parts. The model is painted with chain-style aztec pattern with more simplified painted details.

**USS Hood NCC-42296 (DS9, Sacrifice of Angels).**

**USS Valley Forge NCC-43305 (DS9, Tears of the Prophets).**

**Standard original AMT kit:** built as standard with very simplified single blue paint scheme, gold details, pink fluorescent engines (so they could be easily lit via an ultra violet camera pass) and a heavy wash applied with a large brush. Both this kit and a standard original *Reliant* kit (built as the *USS Trial*) were used in scenes where a background ship was needed in various episodes.

**USS Excel NCC-2020 (DS9, Way of the Warrior).**



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